

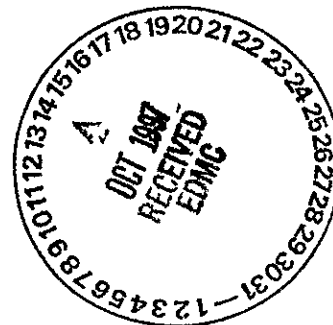


STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

October 1, 1997

Mr. James E. Rasmussen, Division Director  
Office of Environmental Assurance, Permits and  
Policy Division  
U. S. Department of Energy  
Richland Operations Office  
P. O. Box 550, MSIN: A5-15  
Richland, WA 99352



Mr. William D. Adair, Director Environmental  
Protection Responsible Party for Fluor Daniel Hanford, Inc.  
P.O. Box 550, MSIN: H6-21  
Richland, WA 99352

Dear Messrs. Rasmussen and Adair:

Re: Notice of Deficiency (NOD) for the 324 Building Radiochemical Engineering Cells and  
High-Level Vault Closure Plan, Revision 0.

47365

The Washington State Department of Ecology (Ecology) has reviewed the 324 Building Radiochemical Engineering Cells (REC) and High-Level Vault (HLV) Closure Plan, Revision 0, and State Environmental Policy Act (SEPA) checklist submitted May 30, 1997. Ecology's review has determined the closure plan is incomplete and the SEPA checklist inaccurate. In accordance with the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement[TPA]) the U.S. Department of Energy (USDOE) is to develop a response table within ninety days. Ecology will then review the response table and supplemental information requested. The closure plan will be revised to address the deficiencies noted following a sixty day issue resolution period.

This closure plan is incorrectly identified as Revision 0, when it is actually Revision 1. There are several implications associated with this error. First, in December 1995 USDOE submitted to Ecology the 324 Building REC and HLV Tank Closure Plan to meet TPA milestone M-20-55. If the closure plan submitted in 1995 is not acknowledged as Revision 0, USDOE has missed M-20-55 and compliance action may be invoked. Second, the submittal of the December 1995 closure plan initiated the Document Review and Comment Process of the TPA. Third, an enormous amount of resources were expended by all parties involved in addressing deficiencies noted in the December 1995 version of the closure plan. Regretfully, many of the NOD comments provided on the first closure plan have not been addressed in the revised closure plan and are included in this NOD.

Ecology feels it has provided more than sufficient guidance in the development of an appropriate closure plan. In addition to the NOD's provided on the December 1995 closure plan, numerous comments intended to be addressed in development of the closure plan were provided on the B-Cell Safety Cleanout Project (BCCP) Plan, the 324 Building REC HLV Interim Waste Management Plan (IWMP), the Project Management Plan for Nuclear Facilities Management 300 Area Compliance Program, the 324 Highlevel Vault Interim Removal Action Project (PMP), and the 324 Radiochemical Engineering Cells (REC)/High Level Vault Tanks (HLV) Clean Closure Feasibility Study.

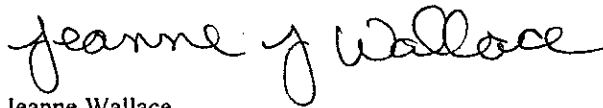
Messrs. Rasmussen and Adair  
October 1, 1997  
Page 2

The enclosed NOD, consisting of 442 numbered deficiencies, is separated into comments regarding SEPA checklist and the closure plan. It is then further divided into general and text specific comments. The general comments specify requirements which were not addressed (or not adequately addressed) in the closure plan. The text specific comments apply to the specific text indicated by a citation to the page and line number from which text of concern is initiated. Several text specific comments will not have the citation to the specific section of the text. These deficiencies apply to the last cited page and line number. The logic is to call out significant issues and to facilitate grouping of similar deficiencies for resolution.

Due to limited resources, Ecology has adopted the practice of providing permittees three opportunities to submit an adequate closure plan. If the third submittal is not adequate, Ecology can revise and issue the closure plan to fulfill the regulations; or issue an administrative order to address unresolved deficiencies, requiring response within 30 days. To date, two submittals of the 324 closure plan have been submitted. Please consider all of Ecology's comments provided in the revised closure plan. The next version of the closure plan is to be submitted electronically, as well as in the typical format. I look forward to reviewing a complete and accurate closure plan for the 324 REC and HLV.

If you have any questions, please contact me at (509) 736-3019.

Sincerely,



Jeanne Wallace  
300 Area Project Manager  
Nuclear Waste Program

JW:skr  
Enclosure

cc: Roger Bowman, RFSH  
Sue Price, FDH  
Fred Ruck III, FDH

cc /enc: Russell Jim, YIN  
Donna Powaukee, NPT  
J. Wilkinson, CTUIR  
Larry Romine, USDOE  
Ellen Mattlin, USDOE  
David Rasmussen, B&W  
David Einan, EPA  
Administrative Record:  
324 REC and HLV Closure (RCRA TSD)  
300-FF-2 Operable Unit (CERCLA)

**324 Building Radiochemical Engineering and Highlevel Vault Tank Closure Plan**  
**(M-20-55 Submit closure plan for Non-Permitted Mixed Waste Units located in the 324 Building**  
**REC B-Cell, D-Cell and HLV)**  
**Submitted May 31, 1997**  
**Department of Ecology Notice of Deficiency**

**State Environmental Policy Act Environmental Checklist Comments**

1.     **A. 1.**     The title of the closure plan should be modified to accurately reflect that the unit being closed includes the Low Level Vault (LLV). For consistency, the name of project contained in the State Environmental Policy Act Environmental Checklist must be revised the title of the closure plan is modified.
2.     **A. 9.**     The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) operable unit 300-FF-3 no longer exists. Modify text to correct inaccuracy.
3.     **A.11.**     Contrary to what the text states all areas of the 324 Building were not adequately considered in defining the boundary of the unit to be closed. Although it was agreed during the Data Quality Objective (DQO) process to incorporate other areas requiring closure into this closure, the entire building was not adequately evaluated. Only in conversation was consideration given to the remainder of the 324 Building. Obvious portions, such as the LLV which most likely would require closure activities in the future, were evaluated for incorporation into this closure. A thorough inspection and records review necessary to identify other areas which would require closure was not conducted. Modify text accordingly.
4.     The third paragraph of this section explains "clean closure ... closure performance standard ... is 'clean debris surface'. Ecology has made it communicated that additional closure activities will be imposed as closure performance standards (integrity assessments, etc.) in order to achieve clean closure. Revise text accordingly.
5.     At this time, the application of the 'clean debris surface' to the HLV and LLV and the final disposition of the piping has not been determined to be appropriate. Remove this statement. Modify text accordingly.
6.     The statement "if it is not possible to demonstrate that the soil is clean, investigation into potential soil contamination will be coordinated and integrated with the CERCLA remedial action process for the OU" is incorrect and must be removed. Modify text accordingly.

**324 Building Radiochemical Engineering and Highlevel Vault Tank Closure Plan Comments**

**General Closure Plan Comments**

7.     **General.** Provide detailed description of methods used for treating dangerous wastes including mixed waste (WAC 173-303-610(3)(a)(iv)). Modify text accordingly.
8.     **General.** Piping and ancillary equipment management and closure must be presented in the closure plan.
9.     **General.** Proposals to conduct activities to fulfill RCRA and Dangerous Waste regulations via other mechanisms must be described in detail in the closure plan including a timeline for each required activity.

10. General. Although it was agreed during the DQO process to incorporate other areas requiring closure into this closure, the entire building was not adequately evaluated. Only in conversation was consideration given to the remainder of the 324 Building. Obvious portions, such as the LLV which most likely would require closure activities in the future, were evaluated for incorporation into this closure process. A thorough inspection and records review necessary to identify other areas which would require closure was not conducted. Modify text accordingly.
11. General. Describe filters, drains, sumps, sewers and ancillary equipment to hotcells, vaults, and vault tanks. Discuss the proposed final disposition of these components. Modify text accordingly.
12. General. The statement "on April 20, 1994 the DOE-RL determined that there is not future use for the material and reclassified the material as mixed waste," repeatedly appears throughout the closure plan. Modify text to explain the significance of the date and the rationale used which changed the classification of the waste.
13. General. Radionuclides and radiation are regulatorily and technically neglected. As such, the review is incorrectly directed to consider non-radionuclide contamination when the majority of risk is associated with the radionuclide contamination. The closure plan must address the hazards associated with the radioactive components of this unit. Modify text accordingly.
14. General. Radionuclides are omitted from the list of clean closure levels. Washington Dangerous Waste regulations do not exclude radionuclides in the listed exclusions (WAC 173-303-071). Modify text accordingly.
15. General. The title of the closure plan should be modified to accurately reflect the boundary of the unit being closed (i.e., the LLV have been incorporated into the closure). Modify text accordingly.
16. General. Proposals to conduct activities to fulfill RCRA and Dangerous Waste regulations via other regulatory mechanisms must be described in detail in the closure plan including a timeline for each required activity.
17. General. The information provided in this document for projects and other activities which took place in the hotcells and for transfers of material into and between tanks is incomplete. For determining the appropriate parameter list for any verification samples or groundwater monitoring, it will be necessary to establish, for each project or activity, the chemicals that were used in the facility and the composition of the wastes which resulted from activities in the facility. If this information cannot be provided with supporting documentation (e.g., laboratory reports, project files, activity logs), then any parameter list must examine all possible dangerous waste constituents. In addition, if this closure is coordinated with the CERCLA operable unit, then the parameter list must be expanded to include parameters that will be needed to perform a quantitative risk assessment.

#### Text Specific Comments

18. iii. Radionuclides and radiation are regulatorily and technically neglected. As such, the review is incorrectly directed to consider non-radionuclide contamination when the majority of risk is associated with the radionuclide contamination. The closure plan must address the hazards associated with the radioactive components of this unit.
19. Radionuclides are omitted from the list of clean closure levels for the tanks and cells. Washington Dangerous Waste regulations do not exclude radionuclides in the listed exclusions (WAC 173-303-071).
20. Address section 6.3 of the Hanford Federal Facility Agreement and Consent Order which states "[t]he TSD units containing mixed waste will normally be closed with consideration of all hazardous substances, which includes radioactive constituents. Hazardous substances not addressed as part of the TSD closure may be addressed under CERCLA past-practice (CPP) authority in accordance with the

process defined in Section 7.0. The following are examples of when a unit may be closed without addressing all hazardous substances (e.g., radioactive waste).

- For treatment or storage units within a radioactive structure (e.g., the Plutonium/Uranium Extraction (PUREX) Plant) it may be possible to remove all hazardous wastes and "clean closure" (See Section 6.3.1). The radioactive constituents would then remain for a future decontamination and decommissioning effort of the entire structure."

21. Describe in detail the management and final disposition of constituents left in place. Reference and explain regulations, documentation, timeline, and coordination of integrated activities for final disposition of all constituents and structures.

## 1.0 Introduction

### General Comments

22. **General.** Modify the closure plan to explain the Department of Energy (DOE) and operating contractors relationship. Describe the owner(s) and operator(s) organizations and chain of command.

23. **General.** Modify the closure plan to explain why this closure plan is being managed independently and uniquely from the facility wide Hanford Site Hazardous Waste Permit.

24. **General.** Modify the closure plan to explain why a Part A does not exist for this unit. Elaborate on why a closure is being performed on a unit which lacks interim status.

25. **General.** Modify the closure plan to summarize the compliance issues identified in Ecology's inspection report of February 16, 1995 and explaining the scope of the closure in relation to the TPA and subsequent negotiations.

26. **General.** Modify the closure plan to explain the operational and RCRA compliance history of the unit.

27. **General.** Modify the closure plan to explain the change in mission.

28. **General.** Modify the closure plan to elaborate on Facility Transition, Decommissioning and Deactivation, and CERCLA process proposed to meet some closure requirements.

29. **General.** Modify the closure plan to incorporate a discussion of activities conducted under the B-Cell Safety Cleanout Project (BCCP) plans, the 324 Building REC HLV Interim Waste management Plan (IWMP), the Project Management Plan for Nuclear Facilities Management 300 Area Compliance Program, the 324 Highlevel Vault Interim Removal Action Project (PMP), and the 324 Radiochemical Engineering Cells (REC)/High Level Vault Tanks (HLV) Clean Closure Feasibility Study.

30. **General.** Modify the closure plan to explain how Ecology comments pertaining to closure activities conducted under the direction of the following documents have been resolved, on these B-Cell Safety Cleanout Project (BCCP) plan, the 324 Highlevel Vault Interim Removal Action Project (PMP), the 324 Radiochemical Engineering Cells (REC)/High Level Vault Tanks (HLV) Clean Closure Feasibility Study and the 324 Building Radiochemical Engineering and Highlevel Vault Tank Closure Plan.

### Text Specific Comments

31. **1-2, 1.** Although it was agreed during the DQO process to incorporate other areas requiring closure into this closure, the entire building was not adequately evaluated. Only in conversation was consideration given to the remainder of the 324 Building. Obvious portions, such as the LLV which most likely would require closure activities in the future, were evaluated for incorporation into this closure

process. A thorough inspection and records review necessary to identify other areas which would require closure was not conducted. Modify text accordingly.

32. 1-1, 12. The expansion of the boundary to include the LLV should be explained and a reference to the DQO agreement provided. Modify the closure plan accordingly.

33. 1-1, 36. The text explains the revision to the document. The document is being revised to fulfill RCRA and WAC requirements. The other parallel actions (mission changing to stabilization and decontamination and potential integration of CERCLA remedial actions) will be considered and activities pursuant to closure of this unit will be coordinated when feasible. However, compliant closure of this TSD unit is the function of the closure plan. Modify the closure plan.

34. 1-2, 1. The text cite is (Ecology 1997) referring to the DQO Agreement. This agreement was co-authored by Ecology, DOE-RL and DOE contractors. The cite should accurately reflect the authorship of the document. Modify the closure plan.

35. Revise text to describe the Hanford Site and provide the EPA identification number (WA890008967). This information is necessary because this closure is not being incorporated into the Hanford Facility RCRA Permit ("Sitewide Permit" (SWP)) which typically addresses this information in the General Information section. The development and management of this closure outside the scope of the SWP should also be described.

36. Modify the closure plan to provide text to distinguish the components addressed in this closure from the remainder of the building.

37. Modify the closure plan to explain the relationship of this unit and/or building to the CERCLA operable units 300-FF-2 and 3-FF-5.

38. Modify the closure plan to explain the proposed processes and documentation that will fulfill closure requirements proposed to be met by CERCLA.

## 2.0 Facility Description

### General Comments

39. General. Please modify the closure plan to include the complete construction and operational history of the each component of the 324 Building being addressed in this closure. Revise text to incorporate design features and installation procedures for the tanks and ancillary equipment into the closure plan. Provide a complete construction and operational history of the LLV and HLV tanks.

40. General. Modify closure plan to incorporate design features and installation procedures for the vault tanks and ancillary equipment into the closure plan.

41. General. Please modify text to provide as design, built drawings, modifications, previous location and function of each of the vault tanks

42. General. Provide a discussion of the equivalency of the integrity assessments performed on the tanks, vaults, and hotcells to those required by the Dangerous Waste regulations for tanks managing dangerous waste. Describe radiography procedures and compare to current dangerous waste tank requirements and/or guidance. Modify text accordingly.

43. General. Describe the material of which the tank support legs are composed. Explain how the legs are attached to the tanks (welds, screws, glue). Modify text accordingly.

44. General. Tank 112 used in conducting dangerous waste treatment associated with closure of this unit. Describe this component of the unit and its ancillary equipment, how it was used in support of closure and its final disposition. The complete tank waste treatment apparatus including ancillary equipment must be described in detail in the closure plan.

45. General. Tanks 114, 115, 118 must be addressed in the closure plan.

#### Text Specific Comments

46. 2-1, 11. The facility change in mission from research and development under management of the Pacific Northwest National Laboratories (PNNL) to facility transition under management of Babs and Wilcox (B&W) must be described. The ultimate disposition of the facility has significant impact on determining the appropriate closure strategy. Describe long range planning for this facility. If adequate information does not exist, base the facilities future disposition on the funding baseline assumptions (i.e., 10 year plan, MYWP). Revise text to address the noted deficiency and to make it consistent with the text provided on page 1-1, line 39 of the closure plan.

47. 2-1, 18. The text states "*most* processes ... have been discontinued". Modify text to describe processes still occurring in the REC, HLV and LLV and the duration of operation.

48. 2-1, 24. Delete "Through ... that" from the first sentence of the paragraph. Modify text accordingly.

Although it was agreed during the DQO process to incorporate other areas requiring closure into this closure, the entire building was not adequately evaluated. Only in conversation was consideration given to the remainder of the 324 Building. Obvious portions, such as the LLV which most likely would require closure activities in the future, were evaluated for incorporation into this closure process. A thorough inspection and records review necessary to identify other areas which would require closure was not conducted.

49. 2-1, 32. Modify the text of the closure plan to discuss the final disposition of the ventilation system (i.e., will operate for the next 30 years in accordance with requirements, etc.).

50. 2-1, 36. The first sentence of this paragraph is redundant and misleading. Revise text to delete the first sentence and integrate with the previous paragraph which requires revision. See comment regarding page 2-1, line 24

Although it was agreed during the DQO process to incorporate other areas requiring closure into this closure, the entire building was not adequately evaluated. Only in conversation was consideration given to the remainder of the 324 Building. Obvious portions, such as the LLV which most likely would require closure activities in the future, were evaluated for incorporation into this closure process. A thorough inspection and records review necessary to identify other areas which would require closure was not conducted.

51. 2-2, 21. Describe the function of the crawl space under A Cell described in this section and specify if it can be accessed for potent use in conducting closure activities. Modify text accordingly.

52. Specify and describe all filters, sewers, sumps, drains, and emission control equipment serving A Cell. Modify text accordingly.

53. 2-2, 29. Describe the contents and condition of B-Cell on the date the TPA milestone was signed (i.e., cluttered with ...). Provide an approximation of the percentage of floor, trench and sump surface which was visible unobstructed over the past 10 years.

54. Modify text to describe all monitoring, maintenance and inspections of the floor, trench, and sump which occurred since installation of the hotcell.

55. Modify text to specify the design and as built life expectancy, maintenance and monitoring, and expected final disposition of the roof

56. 2-2, 40. Describe procedures implemented to inspect, monitor and maintain the sump and ancillary equipment. Modify text accordingly.

57. Describe the operation and design of the sump and ancillary equipment. Modify text accordingly.

58. Explain how liquid was removed from the sump and where liquid in the sump would be transferred (i.e., vault tank, RLWS). Modify text accordingly.

59. Specify if the liquid level alarm was ever turned off or otherwise manipulated not to alarm if liquid reached the sump. Modify text accordingly.

60. Explain how the alarm was functioning during the periods in which liquid was allowed to evaporate.

61. Specify if the sump alarm was trigger when the Nitric Acid solution or melter heal was spilled to the floor of B-Cell and left in place.

62. 2-3, 1. Explain the regulatory status of the HEPA filter system (i.e., DOH permitted).

This revision of the closure plan is inconsistent with the previous version. The first version stated the HEPA system removes 99.5 percent ... however this version states the HEPA system removes 99.97 percent. Verify correct efficiency and revise text accordingly.

63. 2-3, 14. Describe filters, drains, sumps, sewers and ancillary equipment to C Cell and discuss the proposed final disposition.

64. 2-3, 32. The December 1995 version states only the floor is lined with stainless steel and the walls are painted concrete. This version states that the walls are lined. Verify if walls are lined. Revise closure plan to reflect correct information.

65. 2-4, 1. Revise text to describe ancillary equipment. A tank system (which is being closed) consists of a dangerous waste storage or treatment tank and its associated ancillary equipment and containment system. Ancillary equipment means any devise including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that are used to distribute, meter, or control the flow of dangerous waste from its point of generation to storage or treatment tanks to a point of disposal on-site, or to a point of shipment for disposal off-site.

66. Specify regulations applicable to air emissions from the REC. Explain how such regulations are fulfilled, including RCRA Air Emission regulations (40 CFR 264 or 265 Subpart AA, BB, and CC).

67. Specify in the closure plan the components within the pipe trench are ancillary equipment to the unit being closed, how these components will be addressed, and how the remaining components and trench will be ultimately dispositioned.

The closure plan is inconsistent with the Project Management Plan (PMP(PNI, 1995b)). The PMP addresses all process piping mechanical joints in B-Cell and D-Cell, the HLV pipe trench, and B- and D-Cell sumps in the transfer system integrity verification. All components must be addressed in defining the boundary of the unit and may require closure action. Revise text accordingly.



68. Tank 112 used in conducting dangerous waste treatment associated with closure of this unit. Describe this component of the unit and its ancillary equipment, how it was used in support of closure and its final disposition. 2-7, 39 - 2-8, 51.
69. 2-4, 18. Pass-through ports and cubicles have not been discussed to date. More information is necessary on these components of the unit to allow further evaluation for closure. Modify closure plan to incorporate information, supported by physical data, to support the proposal of no closure activities for these components.
70. 2-5, 1. Revise text to explain how aqueous and solid radioactive materials were physically managed and regulations implemented in management of the waste.
71. Revise text to specify the duration, waste/material acceptance criteria, and actual waste/material volumes (both radioactive and hazardous) managed in the vault tanks.
72. 2-5, 16. Revise text to provide a comparison of the secondary containment system described for the HLV to the requirements for secondary containment in the Dangerous Waste Regulations (WAC 173-303-640).
73. Revise text to provide the life expectancy and of materials and craftsmanship considering the operation of the facility (i.e., welds, concrete).
74. Revise text to describe quality control applied during construction of the vaults and tanks.
75. Revise text to describe all integrity assessments, maintenance, and monitoring performed on the tank systems. Provide references to specific documents which contain this information. Provide a comparison of these activities requirements for dangerous waste management units in the Dangerous Waste Regulations (WAC 173-303).
76. 2-5, 23. Revise text to provide the levels at which the sump will alarm in the HLV vault and explain how liquid is removed from the sump, designated, and disposed.
77. Revise text to describe record keeping and response procedures to spills and/or alarms which have occurred in the HLV.
78. Revise text to describe all integrity assessments, maintenance, and monitoring performed on the alarm systems. Provide references to specific documents which contain this information. Provide a comparison of these activities to requirements for dangerous waste management tanks (WAC 173-303).
79. 2-5, 32. Revise text to describe all integrity assessments, maintenance, and monitoring performed on the tanks, vaults, and alarm systems. Provide references to specific documents which contain this information. Provide a comparison of these activities requirements for dangerous waste management tanks (WAC 173-303). Specify the duration of monitoring. Ecology requests access to this information and the standards under which such activities were performed. It may be necessary to incorporate into the closure plan or administrative record.
80. 2-5, 38. Explain why Tank 106 has no high liquid level alarm.
81. 2-6, 1. Please revise text to explain the function of Tank 104 from 1954 to 1966. This information is pertinent to the longevity and integrity of the tank and therefore has a bearing on closure of the system.
82. Revise text to describe modifications to the tank when installed in 324.

83. Revise text to describe radiography and leak testing procedures conducted on all tanks and the results of these assessments
84. Revise text to specify if the vaults ever leak tested or radiographed
85. 2-6, 12. Please revise text to explain the function of Tank 105 from 1943 to 1950 and then from 1950 to 1966
86. Revise text to describe modifications to the tank when installed in 324.
87. Revise text to provide radiography and leak testing procedures conducted on all tanks and the results of these assessments.
88. 2-6, 22. Please revise text to explain the function of Tank 106 from 1944 to 1966.
89. Revise text to describe modifications to the tank when installed in 324.
90. Revise text to describe radiography and leak testing procedures conducted on all tanks and the results of these assessments.
91. 2-6, 29. Please revise text to explain the function of Tank 107 from 1963 to 1966.
92. Revise text to describe modifications to the tank when installed in 324.
93. This revision of the closure fails to address any form of integrity analysis applied to tank 107. This is not consistent with the previous closure plan. Revise text to describe radiography, dye penetrant, and leak testing procedures conducted on all tanks and the results of these assessments.
94. 2-6, 39. Please revise text to specify the levels at which the sump will alarm in the LLV vault.
95. Please revise text to explain how liquid is removed from the sump, designated, and disposed.
96. Please revise text to describe record keeping and response procedures to spills and/or alarms which have occurred in the HLV.
97. Please revise text to describe all integrity assessments, maintenance, and monitoring performed on the alarm systems, sump, and pumps. Provide references to specific documents which contain this information.
98. Please revise text to provide a comparison of these activities requirements for dangerous waste management units in the Dangerous Waste Regulations (WAC 173-303).
99. 2-6, 50. Please revise text to specify "other tanks in the system".
100. Please revise text to explain why different transfer mechanism are employed in transferring wastes out of the sump (i.e., steam jet in HLV and pumps in LLV).
101. 2-7, 6. Please revise text to explain the function of four tanks in the LLV from 1943 to 1966.
102. Revise text to describe modifications to the tank when installed in 324.
103. Revise text to describe radiography and leak testing procedures conducted on all tanks and the results of these assessments.

104. 2-7, 32. Revise text to describe ancillary equipment between room 145 and the LLV and HLV and address how it is to be dispositioned.

105. 2-7, 39. Revise text to specify regulations applicable to air emissions from the REC. Explain how such regulations are fulfilled, including RCRA Air Emission regulations (40 CFR 264 or 265 Subpart AA, BB, and CC).

106. Revise text to specify which piping contained in the 324 Building is included in the closure

107. Revise text to describe all maintenance, monitoring, and inspections performed on piping systems.

108. 2-8, 5. The text states that liquids are moved using jets. However on page 2-6, line 50 states the sump is equipped with liquid sensing alarms and *pumps* to transfer liquid to other tanks in the system. Verify which statement is correct and modify text accordingly.

109. 2-8, 21. Specify if all piping contained in the building is single walled.

110. Revise text to specify if all piping within the vaults is contained within the stainless steel liner (i.e., specify if the liner extend above the piping).

111. Revise text to specify if the concrete of the building floor, walls, pipe trench and vaults are coated by an impermeable coating.

112. Revise text to specify the location and length of the secondary containment (12 inch pipe) provided for a portion of the HLV piping. Explain why the LLV piping is not contained in this pipe. Explain how, or reference other section, piping will be dispositioned.

113. Revise text to describe monitoring, maintenance and inspection procedures for the building piping.

114. 2-10, 5. Revise text to explain which portions of the building utilize the waste lines contained in room 146. Explain how this room is to be dispositioned.

Revise text to provide a narrative of how the remainder of the building is proposed to be addressed.

115. 2-10, 30. The security section must be expanded due to the fact this closure will not be incorporated into the Hanford Facility Dangerous Waste Permit.

116. Table 2-1. Retitle table to "Areas of the Building pursuing Closure".

Note, this table does not address soil or ground water.

117. Table 2-1, 3. Change "N/A" to "none" in the components for closure column.

118. Table 2-1, 4. Must address clean out of contents of B Cell including tanks 112 and 118.

119. Table 2-1, 5. Change "N/A" to "none" in the components for closure column.

120. Table 2-1, 7, 8, 11, 16, and 17. The table does not provide the components to be isolated (component noun, isolate = verb). Revise table accordingly.

121. Table 2-1, 13. Change "N/A" to "none" in the components for closure column.

122. Table 2-1, 14. Change "N/A" to "none" in the components for closure column.

123. Figure 2-2. Revise text to provide rationale for not including the duct space (which appears to be depicted as the area consisting of the airlock) in the closure of this unit. The duct space may have become highly contaminated by the operations conducted in the REC and vaults.

Explain the function of the duct space.

124. Figure 2-5. Revise diagram to title areas contained in this diagram.

125. Figure 2-6. Revise text to provide rationale for not including the duct space (which appears to be depicted as the area consisting of the airlock) in the closure of this unit. The duct space may have become highly contaminated by the operations conducted in the REC and vaults.

Explain the purpose/function of the duct space.

126. Figure 2-8. Please revise text to explain the purpose of the ledge upon which tanks 106 and 107 sit. This can occur in the sections which address these specific tanks. Specify if the shelf is designed to contain liquid on the shelf and then how it is directed toward the sump.

Revise text to specify if the sumps are connected to a common drain. Describe in detail how material is monitored, removed, and disposed from the HLV and LLV vault sumps.

127. Figure 2-10, 11, 12. These pictures are great. Please incorporate pictures of B-Cell.

### 3.0 Process Information

#### Text Specific Comments

128. 3-1, 8. Although it was agreed to incorporate other areas requiring closure into this closure, the entire building was not evaluated. Only superficial consideration was given to the remainder of the 324 Building. Obvious portions, such as the LLV, which most likely would require closure activities in the future were evaluated for incorporation into this closure process.

129. 3-1, 16. The text states the following three programs have generated the *liquid* waste in B-Cell and HLV. All hazardous waste contained in this unit are subject to the closure performance standards regardless of the physical state.

Please remove "liquid" from the sentence. All waste generating processes which contributed to the contamination of the unit must be presented, not just the major projects conducted in B-Cell.

130. 3-1, 32. All programs which generated waste must be presented in the closure plan. Selection of appropriate analytical constituents or appropriate decontamination technology is dependent upon the current and historic operation of the unit. Therefore provide information regarding all programs.

It is not appropriate to limit the process knowledge to only a portion of the projects conducted in the unit. The closure plan must include a description which identifies the maximum extent of operation of the facility and an estimate of the maximum inventory of dangerous waste ever on-site over the active life of the facility. (for example see the 216-B-3 Expansion Ponds Closure Plan)

131. Activities conducted under the BCCP must be incorporated into the closure plan.

132. The closure plan must address all processes which generated waste managed by the unit. This information will support the use of process knowledge, determine data gaps, and may be used to justify using indicator analytes or identifying appropriate decontamination technologies.

133. 3-1, 39. Revise text to specify all areas from which the vault tanks could receive or distribute material. Discuss mechanisms which preclude waste generated outside the REC from entering the vault tanks.

134. Revise closure plan to identify piping and explain the mechanism for discharging from both of the vaults to the Radioactive Liquid Waste System. Specify if HLW discharges to the RLWS

RLWS discharge logs shall be submitted for regulatory review.

135. Revise text to specify how, or if, the remainder of the building generated waste accesses the RLWS.

136. 3-2, 8. Revise text to specify the disposition of the 90 day storage tanks in A-Cell. The text states this waste was containerized and transferred to the Central Waste Complex (CWC) but it does not address the current status of the tank

137. 3-2, 12. Modify the closure plan to explain the current status, and the proposed physical and regulatory management of the isotopic heat sources.

See general comment regarding evaluation of building for incorporation into closure. This tank could very easily be incorporated into the closure of the unit but has not been addressed. Note, a closure could be called on 90 day storage areas if the Department deems it appropriate and necessary. I am not advocating it in this case but it does illustrate that all portions of the REC, let alone the unit were evaluated for closure.

138. 3-2, 21. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

139. Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

140. 3-2, 30. The text states the following three programs have generated the *liquid* waste in B-Cell and HLW. All hazardous waste contained in this unit are subject to the closure performance standards regardless of the physical state. Please delete "liquid" from the sentence. All waste generating processes which contributed to the contamination of the unit must be presented, not just the major projects conducted in B-Cell.

All programs which generated waste must be presented in the closure plan. Selection of the proper analytical constituents and/or decontamination technologies must reflect current and historic operation of the unit. Therefore provide information regarding "minor" programs.

It is not appropriate to limit the process knowledge to only a portion of the projects conducted in the unit. The closure plan must include a description which identifies the maximum extent of operation of the facility and an estimate of the maximum inventory of dangerous waste ever on-site over the active life of the facility (for example see the 216-B-3 Expansion Ponds Closure Plan).

141. 3-2, 35, 37, 41 Please define "no activity" in a footnote to the table. Because the text only states *the majority of waste producing activities of concern for closure* are presented in the table it is unclear exactly what was occurring in the interim periods. Specify if *minor* activities were occurring during this time

It is not appropriate to limit the process knowledge to only a portion of the projects conducted in the unit. The closure plan must include a description which identifies the maximum extent of operation of the facility and an estimate of the maximum inventory of dangerous waste ever on-site over the active life of the facility (for example see the 216-B-3 Expansion Ponds Closure Plan).

142. 3-2, 39. The duration (1982 -1987) of the pilot-scale RLFCM testing task is inconsistent with that specified in revision 0 (1986-1987). Verify the duration of the project and modify the closure plan as necessary.

143. 3-3, 5, 20, 32, 43 This comment applies to all processes conducted in the REC.

144. Revise text to describe chemical processes including schematics (applies to all processes conducted in the REC).

145. Revise text to explain all waste removal activities which occurred (applies to all processes conducted in the REC).

146. Revise text to provide reference to records from which information was extracted or acquired (applies to all processes conducted in the REC).

147. Revise text to explain how the vault tanks were utilized during the projects (applies to all processes conducted in the REC).

148. 3-3, 29 and 41. Clarify why Ecology 1996 is cited. The movement of the glass logs to the PUREX storage tunnels was independent of the Hanford Site Hazardous Waste Permit which is the only Ecology 1996 document included in the reference section.

149. 3-3, 43. Modify the closure plan to explain the current status, and the proposed physical and regulatory management of the isotopic heat sources.

150. 3-4, 1. Modify the closure plan to specify the source of the feed material used in the ceramic melter program. Specify number of tanks (within B-Cell), current status, and final disposition of process tanks. Specify if the tanks or B-Cell, or both, contained feed material at the time the project was discontinued. It may be appropriate to reference other section of the closure plan.

This comment applies to all processes conducted in the REC;

Provide chemical processes including schematics.

Explain all waste removal activities which occurred.

Provide reference to records from which information was extracted or acquired.

Explain how the vault tanks were utilized during the projects.

151. 3-4, 6. Modify the closure plan to specify if the 34 canisters currently stored in A-Cell addressed here are the same 34 canisters 34 isotopic heat sources address on page 3-3, line 48. The text states that these canisters are not regulated under RCRA. Explain if these materials are regulated by the TPA. Note the Dangerous Waste regulations does not provide the same exemptions as the federal RCRA program.

152. 3-4, 10. Modify the closure plan to provide the complete composition of the feed that consisted of a nitric acid solution. Note, the acid may have had the potential to compromise the integrity of the cell floor therefore an integrity assessment of the cell floor will be required.

153. 3-4, 15. Modify the closure plan to address both the 1988 B-Cell Safety Cleanout Project (BCCP) and the 1995 BCCP submitted to Ecology for review in association with the TPA M-89 milestones. Provide a reference for both documents in chapter 9, References. Also note the comments Ecology provided. Summarize the difference between the documents and activities conducted under each project.

154. Modify the closure plan to explain how the BCCP relates to the closure of this unit.

Modify the closure plan to explain the disposition of Ecology comments provided on the 1995 BCCP submitted for review which were to be considered in development of the closure plan.

155. 3-4, 22. Modify the closure plan to provide basis for designation for equipment being disposed as low-level waste. The previous section addresses the potential for significant contamination of equipment within B-Cell.

156. 3-4, 40. Ecology has the authority to call closure on all dangerous waste facilities. Therefore modify the closure plan to provide rationale for not extending closure activities to C-Cell. See general comment.

157. 3-5, 6. The waste treatment equipment stored in D-Cell was used to treat hazardous waste as part of this closure and therefore must be dispositioned unless a need for future use can be demonstrated. The equipment will not sit indefinitely pending a determination for disposition to be made by DOE. Revise closure plan accordingly.

158. 3-5, 8. Tank 112 used to treat hazardous waste as part of this closure and therefore must be specifically addressed in the closure plan due to its direct use in closure of this unit.

159. 3-5, 29. Modify the closure plan to specify section of closure plan which describes the details of how the airlock is to be isolated.

Modify the closure plan to specify the final disposition of the airlock.

160. 3-5, 38. Modify the closure plan to specify sections of closure plan which describes the details of how the pipe trench is to be isolated.

Modify the closure plan to specify the final disposition of the pipe trench.

161. 3-6, 4. The cell cubicles information presented in this revision of the closure plan is new information which has not been addressed to date. Therefore it is not appropriate to specify that closure activities are not required for the cell cubicles without providing detailed information which illustrates no potential for contamination will remain after closure. Describe the final disposition of this component of the unit. Revise text accordingly.

162. 3-6, 9. Modify text to provide sections dedicated solely to the HLV tank vault and another to the ancillary equipment for the tanks and vault.

163. Modify text to specify if free liquids were ever present in the HLV.

164. Modify text to specify the procedures, schedules and results of all integrity and pressure testing performed on building piping. Compare the procedures, schedules and results to those mandated for tanks systems in the Dangerous Waste Regulations (WAC 173-303).

165. 3-6, 12. Modify text to explain why only information on transfers of materials into and out of the HLV and LLV is for waste activities performed since 1988. Restricting the information to the period from 1988 to present has not been justified. Corrective action will be invoked if adequate information is not provided to allow Ecology to determine if closure actions are adequate and appropriate for the unit. All available information is subject to evaluation in closure of this unit.

166. 3-6, 13. Modify text to specify analytical parameters and methods used in sampling, analyzing, and designating tank contents in June 1990.

167. Modify text to specify number of samples and the method of collection for each waste stream sampled

168. Modify text to specify each tank from which samples were taken, and if this was the only sampling conducted.

169. Modify text to provide results of analysis and designation in a table to this chapter while addressing each of the following:

The methods used for sample collection, sample preservation, transportation, allowable time before analysis, sample preparation, analysis, method detection limits, practical quantitation limits, quality control, quality assurance, and other technical requirement and specification must comply with the requirements of the following standard methods as applicable:

- Test Methods for Evaluating Solid Waste, Physical Chemical Methods, Third Edition, US EPA, SW-846 and any revisions or amendment thereto;
- *Methods for Chemical Analysis of Water and Waste*, US EPA, EPA-600/4-79-020 and any revisions or amendments thereto;
- *Standard Method for the Examination of Water and Wastewater*, ASTM American Public Health Association, American Water Works Association and Water Pollution Control Federation and any revisions or amendment thereto.

Ecology may require an analysis to be conducted by more than one method if there is reasonable concern regarding the quality of the data generated by a particular method.

Facility owner/operators may conduct activities, including removing wastes and decontaminating or dismantling equipment and structures at any time prior to closure. Provided Ecology determines that such activities were conducted in accordance with the requirements for closure, they could be approved in the subsequently submitted closure plan. In order for Ecology to make such a determination, facility owner/operators must keep detailed records documenting that all activities conducted prior to closure plan approval are consistent with closure requirements. Information maintained to support consistency with closure requirements should, at a minimum, include the information required for closure.

Note, Ecology cannot accept activities if they are inconsistent with the closure regulations or if adequate information is not available to support a determination of consistency with the closure requirement. If Ecology determines activities were inconsistent with the closure requirements and/or if adequate information is not available to determine constancy, Ecology can require facility owner/operators to conduct additional activities, including but not limited to, removal and/or decontamination of wastes, waste residues, equipment and/or structures, additional sampling and analysis, and/or investigation activities designed to determine the degree to which previously conducted activities comply with closure requirements.

170. 3-6, 13. Modify text to explain why the tank wastes were not managed as mixed waste after sampling, analyzing, and designation in June 1990.

171. 3-6, 15. Modify text to specify administrative controls currently applied to all discharge points from the vault tanks.

172. 3-6, 24. Modify text to specify that the waste treatment project was conducted as a closure activity.

173. The information of the LOS, HLV sump, and cell cubicles was not presented in the earlier version of the closure plan nor in the DQO meetings. Verification activities need to be conducted on these areas of the 324 Building for closure



174. 3-6, 33. Modify text to provide the complete chemical composition of the Cesium Nitrate solution.
175. 3-6, 37. Modify text to explain how it was determined that the water loss from tank 104 was from evaporation and not leakage considering the tank contained corrosive material for an extended period of time for which no integrity assessment or inspection of the tank system occurred. Provide calculations used to make this determination.
176. Modify text to explain what occurred on September 25, 1992 which initiated the addition of water. Explain if, or why not, such activities were conducted prior to September 25, 1992.
177. 3-6, 38. The statement on April 20, 1994 the DOE-RL determined that there is not future use for the material and reclassified the material as mixed waste, repeatedly appears throughout the closure plan. Modify text to explain the significance of the date and the rationale used which changed the classification of the waste
178. 3-6, 40. Modify text to specify that tank 104 was flushed and drained in 1996 as part of the closure activities.
179. 3-6, 49. Modify text to provide the complete chemical composition of the Strontium Nitrate/Cesium Nitrate solution.
180. 3-7, 1. Modify text to explain how it was determined that the water loss from tank 105 was from evaporation and not leakage considering the tank contained corrosive material for an extended period of time for which no integrity assessment or inspection of the tank system occurred. Provide calculations used to make determination.
181. Modify text to explain what occurred on September 25, 1992 which initiated the addition of water. Explain if, or why not, such activities were conducted prior to September 25, 1992.
182. 3-7, 13. Modify text to specify if the 325 Building is hard piped to the 324 Building. Describe the pipe trench connections between the two buildings.
183. 3-7, 15. 3-6, 13. Modify text to specify analytical parameters and methods used in sampling, analyzing, and designating tank contents in June 1990. Specify number of samples and the method of collection for each waste stream sampled. Specify each tank from which samples were taken, and if this was the only sampling conducted. Provide results of analysis and designation in a table to this chapter while addressing each of the following;

The methods used for sample collection, sample preservation, transportation, allowable time before analysis, sample preparation, analysis, method detection limits, practical quantitation limits, quality control, quality assurance, and other technical requirement and specification must comply with the requirements of the following standard methods as applicable:

- Test Methods for Evaluating Solid Waste, Physical Chemical Methods, Third Edition, US EPA, SW-846 and any revisions or amendment thereto;
- *Methods for Chemical Analysis of Water and Waste*, US EPA, EPA-600/4-79-020 and any revisions or amendments thereto;
- *Standard Method for the Examination of Water and Wastewater*, ASTM American Public Health Association, American Water Works Association and Water Pollution Control Federation and any revisions or amendment thereto

Ecology may require an analysis to be conducted by more than one method if there is reasonable concern about the quality of the data generated by a particular method

Facility owner/operators may conduct activities, including removing wastes and decontaminating or dismantling equipment and structures at any time prior to closure. Provided Ecology determines that such activities were conducted in accordance with the requirements for closure, they could be approved in the subsequently submitted closure plan. In order for Ecology to make such a determination, facility owner/operators must keep detailed records documenting that all activities conducted prior to closure plan approval are consistent with closure requirements. Information maintained to support consistency with closure requirements should, at a minimum, include the information required for closure.

Note. Ecology cannot accept activities if they are inconsistent with the closure regulations or if adequate information is not available to support a determination of consistency with the closure requirement. If Ecology determines activities were inconsistent with the closure requirements and/or if adequate information is not available to determine consistency, Ecology can require facility owner/operators to conduct additional activities, including but not limited to, removal and/or decontamination of wastes, waste residues, equipment and/or structures, additional sampling and analysis, and/or investigation activities designed to determine the degree to which previously conducted activities comply with closure requirements.

184. 3-7, 18. Modify text to specify that tank 106 was flushed and drained in 1996 as part of the closure activities.

185. 3-7, 21. Modify text to specify the location or access point(s) of the chemical addition line(s).

186. 3-7, 25. Modify text to specify the composition of the High-level waste material that was used as feed material for the NWVP which was stored in tank 107. Specify the concentration of the Nitric Acid solutions added. Explain why the acid was added to the tank. Specify when and why rinse water was added.

187. 3-7, 28. Tank 112 needs to be addressed in a stand alone section due to its use in closure activities. Clarify why it is referred to as a "supplemental" tank in B-Cell. Specify management practices imposed on tank 112 while it stored material in B-Cell from January 1990 to November 1994. Specify if any releases from tank 112 occurred. Revise text accordingly.

188. Revise paragraph to reflect that research and development activities were being conducted to evaluate treatment, and thus disposal, of the feed material. The way the text presents the scenario it appears as though "illegal" treatment was occurring.

189. 3-7, 32. Modify the closure plan to explain how it was determined that the water loss from tank 107 was from evaporation and not leakage considering the tank contained corrosive material for an extended period of time for which no integrity assessment or inspection of the tank system occurred. Provide calculations used to make determination.

190. Modify the closure plan to explain what occurred on March 2, 1993 which initiated the addition of water. Explain if, or why not, such activities were conducted prior to September 25, 1992, which is the date the other tanks in the HLV received water additions

191. 3-7, 35. The statement on April 20, 1994 the DOE-R1 determined that there is not future use for the material and reclassified the material as mixed waste, rapidly appears throughout the closure plan. Modify the closure plan to explain the significance of the date and the rationale used which changed the classification of the waste.

192. 3-7, 37. Modify the closure plan to specify that tank 104 was flushed and drained in 1996 as part of the closure activities

193. 3-7, 40. The High-Level Vault Waste removal activities were conducted in pursuit of closure. The TPA provided a mechanism in which to proceed with closure activities prior to approval or initiation of the closure plan. Revise text accordingly.

194. Modify the closure plan to specify what regulations were imposed on the aqueous and solid radioactive and hazardous materials.

195. 3-7, 44. The HLV tanks were emptied, not "decontaminated" as stated in the text. Revise text to replace "decontaminated" with "emptied".

196. 3-7, 46. Due to the integral use of tank 112 and associated piping in conducting closure activities a section or sub-section must address the closure performance standards for this tank. Revise text accordingly.

197. 3-8, 1. Modify the closure plan to incorporate a copy of the agreement/arrangement to use the strontium 90 medical isotope program. Specify the DOE program and contractor or organization which utilized the strontium. Describe the management of the strontium while pending physical transfer to the medical isotope program. Provide a timeline for all activities associated with managing the strontium from the point at which it was collected from the tanks.

198. Modify the closure plan to describe the management and final disposition of the cesium 137.

199. Modify the closure plan to describe the designation in accordance with WAC 173-303 of all distinct waste streams generated in the treatment of the tank waste conducted as part of this closure process.

200. 3-8, 6. Modify the closure plan to explain the basis for using Nitric Acid and Carbonate rinse solutions.

201. 3-8, 10. Modify the closure plan to provide sections dedicated solely to the LLV tank vault and another to the ancillary equipment for the tanks and vault.

202. Modify the closure plan to specify if free liquids were ever present in the LLV.

203. Modify the closure plan to specify the procedures, schedule and results of all integrity and pressure testing performed on building piping. Compare the procedures, schedules and results to those mandated for tanks systems in the Dangerous Waste Regulations (WAC 173-303).

204. 3-8, 12. Modify the closure plan to specify if the Low-Level Vault (LLV) tanks are currently empty.

Modify the closure plan to specify if the LLV tanks are actively managing or utilized in managing liquid wastes.

Modify the closure plan to specify all generation activities and the location of such activities which transferred wastes to the LLV tanks

205. 3-8, 30. Modify the closure plan to specify analytical parameters and methods used in sampling, analyzing, and designation tank contents in June 1990.

206. 3-8, 32. Modify text to specify the basis for describing the loss of liquid from Tank 101 as due to evaporation

207. 3-8, 49. Modify text to identify the "nonhazardous solution", (i.e., composition, source by project(s)).

207. 3-10, 46. The information on the presence of satellite accumulation and less-than-90-day storage areas in the EDL-146 was not presented during the DQO meetings. Verification activities need to be conducted on this area of the 324 Building for closure.

208. 3-11, 5. Revise the text to address verification of closure for the waste management areas in EDL-146.

#### Chapter 3.0 diagrams and/or figures

209. Modify the closure plan to provide a schematic of the tank 112 piping (as used in closure activities and prior functions) due to its function in conducting closure activities.

210. Modify the closure plan to provide a diagram the pipe trench. Modify the closure plan to explain the pipe trench function(s) and specify if it ever managed free liquids. Explain how liquids unconfined by piping which accessed the pipe trench were managed.

211. Modify the closure plan to provide a schematic for the vaults. Depict all piping to sumps, piping between LLV and HL.V, piping within the 324 Building which leads to the RLWS, process sewer, and retention process sewer.

212. Tank 114, 115, 118 and the load out station must be addressed in the closure plan

213. Modify the closure plan to specify the procedures, schedule and results of all integrity and pressure testing performed on building piping. Compare the procedures, schedules and results to those mandated for tanks systems in the Dangerous Waste Regulations (WAC 173-303).

214. Specify regulations applicable to air emissions form the unit and explain briefly how such regulations are fulfilled, including RCRA Air Emission Regulations (40 CFI 265 Subpart AA, bb, and cc).

### 4.0 Waste Characteristics

#### General Comments

215. General. The closure plan must be revised to accurately reflect the information known about the waste. Only limited information regarding process knowledge of the waste has been documented.

#### Text Specific Comments

216. 4-1, 6. It is not appropriate to limit the process knowledge to only a portion of the projects conducted in the unit. The closure plan must include a description which identifies the maximum extent of operation of the facility and an estimate of the maximum inventory of dangerous waste ever on-site over the active life of the facility (for example see the 216-B-3 Expansion Ponds Closure Plan).

The closure plan must address all processes which generated waste managed by the unit. This information will support the use of process knowledge, determine data gaps, and may be used to justify using indicator analytes or identifying appropriate decontamination technologies.

217. Modify text to incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

218. Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Submit to the department process records, and waste analysis data utilized to describe the waste characteristics to the Department.

219. Modify text to provide documentation used to identify the sources, type and waste designations under RCRA and the Dangerous Waste regulations for material. Specify all verification and validation measures conducted applied to this information and documentation.

220. Modify text to provide documentation of how the RCRA Land Disposal Restrictions were applied to the waste streams generated in the closure process to the Department. Address the potential for contamination of F002 used on the manipulators as stated in Table 2.1 of the feasibility study for clean closure.

221. Modify text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

222. Modify text to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied.

223. 4-1, 14. Modify text to insert "and storage" following "generation in the first sentence of the first paragraph of section 4.1.

The second sentence is misleading. Revise the paragraph to reflect that besides the container of dangerous waste moved to D Cell, process equipment and debris contaminated with dangerous waste is located in B Cell. For example, heavy metal addressed in section 4.1.1, the Nitric Acid solution which was spilled on the B Cell floor and never cleaned up or contained and 1,1,1 Trichloroethane (F002) used on the manipulators.

224. 4-1, 21. Modify text to specify the volume and physical states of the melter feed.

Submit to the Department to provide documentation and verification of the complete composition of the feedstocks used during pilot-scale testing of vitrification technologies. If such material is sensitive for national security or proprietary reasons, mark it as such and the department will manage it accordingly.

225. Provide to the department copies of all occurrence reports associated with the 324 Building REC, HLV, LLV and pipe trench to the department.

226. 4-1, 29. Modify text to incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Submit copies of, or provide access to, all original documentation of process knowledge, process records, and waste analysis data utilized to designate the waste material contained in B Cell to the department.

Submit documentation used to identify the sources, type and waste designations under RCRA and Dangerous Waste regulations, and all verification and validation measures conducted. Note, Because Washington is an authorized state for implementation of the federal RCRA program it can and has imposed broader designation requirements. Therefore the waste must be designated in accordance with state requirements. Specify if state requirements were addressed in designating the waste streams.

227. 4-1, 34. Modify text to explain why 1,1,1 Trichloroethane (F002) used on the hot cell manipulators is not considered a potential B Cell contaminant. Explain why the *product* is stored in the satellite accumulation area.

228. Modify text to describe how the maximum inventory was estimated.

229. 4-1, 49. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Provide copies of, or access to, all occurrence reports associated with the 324 Building to the department.

230. Revise the closure plan to provide documentation and verification of the complete composition of the feedstocks used during pilot-scale testing of vitrification technologies. If such material is sensitive for national security or proprietary reasons, mark it as such and the Department will manage it accordingly.

231. Revise the closure plan to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

Revise the closure plan to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied.

232. 4-2, 1. Submit to the department copies of documented analytical results used to characterize the dispersible material.

Reference is difficult to correlate to chapter 9, references. Modify text accordingly.

233. 4-2, 37. Reference is difficult to correlate to chapter 9, references. Modify text accordingly.

234. 4-2, 42. Please specify number of process tanks located in B Cell. Modify text accordingly.

235. Provide documentation and verification of the complete composition of the feedstocks used during pilot-scale testing of vitrification technologies. If such material is sensitive for national security or proprietary reasons, mark it as such and the Department will manage it accordingly.

Reference is difficult to correlate to chapter 9, references. Modify text accordingly.

236. 4-3, 1. Modify text to provide the complete composition of the Liquid Metal Seal.

Reference is difficult to correlate to chapter 9, references. Modify text accordingly.

237. 4-3, 10. Please provide the full composition of the shielding window oil, associated cleanup material, potential contaminants, and the basis for regulation as a state only mixed waste. Modify text accordingly.

Reference is difficult to correlate to chapter 9, references. Modify text accordingly.

238. 4-3, 25. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Modify text to describe documentation used to identify the sources, type and waste designations under RCRA and the Dangerous Waste regulations for material. Specify all verification and validation measures conducted.

239. 4-3, 30. The first paragraph of section 4.2 requires clarification. The first sentence "Liquids that were generated within the REC had been discharged to the vault tanks since 1968" appears misleading.

It is my understanding that High-level radioactive liquid waste from throughout the building, and perhaps activities outside the building was introduced waste to the 300 RLWS via the HLV system. Verify the source of the liquid waste and revise text accordingly.

The second sentence appears misleading for the same reasons and because it makes no reference to waste storage. Provide documentation used to summarize sources, type and preliminary waste designations under RCRA/Dangerous Waste Regulations and all verification and validation measures conducted.

240. 4-3, 40. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Modify text to provide documentation used to identify the sources, type and waste designations under RCRA and the Dangerous Waste regulations for material. Specify all verification and validation measures conducted

Modify text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

Modify text to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied.

241. 4-4, 15. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

The process history must include ALL activities which contributed waste to the units being closed.

Provide copies of, or access to, all original documentation of process knowledge, process records, and waste analysis data utilized to describe the waste characteristics to the department.

Provide documentation used to summarize sources, type and waste designations and all verification and validation measures conducted.

242. Modify text to explain how the RCRA Land Disposal Restrictions were applied to the waste streams generated in the closure process to the Department. Address the potential for contamination of F002 used on the manipulators as stated in Table 2.1 of the feasibility study for clean closure.

243. Modify the text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

Modify the text to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied

244. Table 4-1 The table must be modified to reflect the corrosive waste code for the Nitric Acid spill which occurred in B Cell as stated in section 4.1.

245. Modify text to explain why fluorides and chlorides are not addressed

Submit all maintenance and monitoring records for hot cells.

246. Table 4-2. Modify the table to provide a basis for designation (i.e., reference sampling conducted)

Submit transfer logs for discharges from the 324 Building to the 340 complex.

247. Table 4-4. Modify text to provide documentation used to identify the sources, type and waste designations under RCRA and the Dangerous Waste regulations for material. Specify all verification and validation measures conducted

248. Modify text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

Modify text to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied.

Provide documentation and verification of the complete composition of the feedstocks used during pilot-scale testing of vitrification technologies. If such material is sensitive for national security or proprietary reasons, mark it as such and the Department will manage it accordingly.

Modify text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

249. Table 4-5. Provide a footnote to the table to specify the source(s) of information contained in the table and revise the table to include an analytical methods column.

250. Incorporate documentation of process records, process knowledge, and waste analyses data into the Appendices of the closure plan.

Revise the closure plan to describe process for investigating the process knowledge and specify the source from which the information was extracted.

Modify text to describe documentation used to identify the sources, type and waste designations under RCRA and the Dangerous Waste regulations for material. Specify all verification and validation measures conducted

Modify text to specify all regulatory requirements or guidance followed in conducting sample collection and analysis of waste analyses data used for process knowledge.

Modify text to specify the number of samples analyzed. Specify methods, parameters, and quality assurance/control applied.

251. Table 4-6. Revise the table to provide a designation column and a MTCA B (A for constituents not addressed by B) level column for each constituent.

252. Table 4-7. This table is confusing and requires revision. The purpose of this closure activity is to close the unit, not designate the waste which it contains. See comment on Table 4-6.

253. Specify the analytical parameters and method used in designating waste. Specify the number of samples collected and the method of collection for each waste stream sampled. Note, the sampling and analysis plan must be incorporated into the closure plan. Modify text and tables accordingly.



254. This table is also incomplete. It must be revised to indicate in the "Dangerous Constituents" column that Tank 107 contained waste with a pH less than 1 and that Tank 108 contained waste with a pH of 0.7.

## 5.0 Groundwater Monitoring

### General Comments

255. General. Modify text to address 6.3.1 of the TPA which states "any demonstration for clean closure of a disposal unit or selected treatment units as determined by the lead regulatory agency, must include documentation that groundwater and soils have not been adversely impacted by that TSD group/unit, as described in 173-303-645 WAC."

256. General. Proposals to conduct activities to fulfill RCRA and Dangerous Waste regulations via other regulatory mechanisms must be described in detail in the closure plan including a timeline for each required activity.

### Text Specific Comments

257. 5-1, 1. Delete the first sentence of this section. The designation of this unit as a regulated unit is not the intent of these closure activities. Revise closure plan accordingly.

258. At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment components (liners, etc.), contaminated soils and structures and equipment contaminated with waste and manage them as dangerous waste... The closure plan... must meet all of the requirements specified in WAC 173-303-610, WAC 173-303-620 and WAC 173-303-640(8)(a). Revise closure plan accordingly.

259. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in (a) of this subsection, then the owner or operator must close the tank and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (See WAC 173-303-665(6)). In addition for the purposes of closure, post-closure, and financial responsibility, such a tank system then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in WAC 173-303-610, and WAC 173-303-620. [WAC 173-303-640(8)(b)]. Revise text accordingly.

260. In addition, the requirements of WAC 173-303-645(1)(a)(i) except as provided in subsection (b), apply to owners and operators of *facilities that treat, store or dispose of dangerous waste*. The owner or operator must satisfy the requirements of subsection (a)(ii) for all waste (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in such units. Subsection (a)(ii) states that all solid waste management units must comply with the requirements in WAC 173-303-646(2). Revise text accordingly.

261. 5-1, 7. It is not adequate to simply state that groundwater in the 300 Area is included in the 300-FF-2 OU and is being investigated as part of the CERCLA process. Revise text accordingly.

262. This statement is not correct. The CERCLA OU does not fulfill the groundwater requirements of WAC 173-303-610, WAC 173-303-640, WAC 173-303-645, or WAC 173-303-646 which are applicable to this unit. Revise text accordingly.

263. The closure plan must address groundwater. There must be a commitment to perform post-closure care if it is determined by the department to be necessary. Revise closure plan accordingly.

264. Groundwater samples from groundwater monitoring well 399-3-11, located approximately 100 feet down gradient of the 324 Building contained uranium at an average concentration of over 130 ug/L during 1996. Uranium in monitoring wells up gradient of the 324 Building did not exceed a concentration of 46 ug/L during 1996. Historical data from these wells did not detect a slug of uranium in the groundwater which would have migrated to the area of the 324 Building at the concentration detected in monitoring well 399-3-11. Areas within the 324 Building are known to have contained uranium bearing compounds which were used to support research in fuel processing operations. Based on the groundwater flow direction, the detection of uranium in monitoring well 399-3-11, and the use of uranium compounds in research conducted in the building, the department has concluded that a release to the environment has probably occurred.

265. A section on 300 Area geology and hydrogeology near the vicinity of the 324 Building must be added to this closure plan. The section must include the following: (1) a description of the vadose zone with detailed information on thickness, lithology, depositional history, saturated and unsaturated hydraulic conductivities, and contaminant transport characteristics; (2) depth to groundwater, a description of the unconfined aquifer from the water table to the basalt aquifer with detailed information on lithology, depositional history, hydraulic conductivity, aquifer transmissivity, groundwater flow direction, groundwater gradient, groundwater flow velocity, and contaminant transport characteristics; and (3) chemical data from the soil and groundwater in the vicinity of the 324 building.

266. All RCRA/CERCLA coordination must be spelled out in detail in the closure plan and contingent post-closure plan. Revise closure plan accordingly.

The closure plan must demonstrate that the CERCLA process will fulfill all Applicable, Relevant, and Appropriate Requirements (ARARs) of the Dangerous Waste regulations and RCRA applicable to this unit. Revise closure plan accordingly.

Modify text to incorporate language describing in what closure requirements apply to this unit and exactly how the CERCLA process will fulfill requirements.

Note, in working closely with the EPA/CERCLA 300 Area Project Manager it has been communicated that DOE and contractors have made no effort to communicate or coordinate RCRA requirements for this unit with those of the 300 Area CERCLA activities. Nor has funding been identified to conduct such activities.

In the event of confirmed or potential soil contamination, groundwater monitoring may also be required for any dangerous waste management unit, including those not subject to a requirement for groundwater monitoring under WAC 173-303-645 (i.e. container storage area).

267. Figure 5-1. The figure depicting the 300 Area CERCLA operable units is not adequate. It must depict the boundary of the groundwater operable unit, all groundwater monitoring wells within 1000 feet of the 324 building; it must indicate the function of each well (CERCLA, RCRA, Sitewide Surveillance), the figure should indicate the groundwater flow direction and any contaminant plumes identified in the groundwater. Revise closure plan accordingly.

268. Add a second figure which shows the elevation of groundwater, indicate and label monitoring well locations. Revise closure plan accordingly.

269. Add trend plots of radionuclides and hazardous constituents for all monitoring wells within 1000 feet of the 324 building. Revise closure plan accordingly.

270. Modify text to explain why the requirements of WAC 173-303-640(2), Assessment of existing tank system's integrity is not being addressed and how the proposed visual inspection is to fulfill the assessment requirements. Revise closure plan accordingly.

Copies of any and all documentation indicating the presence of liquids in the HLV and LLV vaults and/or sumps throughout the operational history of the facility must be submitted to the department. Monitoring documentation of liquid levels in the tanks over the active life of the tanks must be provided to the department. Revise closure plan accordingly.

Provide documentation that the Radioengineering Cells and Highlevel Vault Tanks were constructed to design specifications, and associated quality control and quality assurance. Revise closure plan accordingly.

271. The detection of uranium at monitoring well 399-2-11, located 100 feet downgradient from the 324 building indicates that a release to the environment may have occurred. Clean closure of the 324 building will require that soil beneath the B Cell and the vaults be analyzed for the presence of dangerous wastes or dangerous waste constituents. Characterization of these soils may entail the use of horizontal boreholes for the purpose of collecting soil samples and vadose zone monitoring. A review of building plans and cross-sections indicates that the floor of the vaults is approximately 24 feet below land surface (BLS). Given that there is room to locate drill rigs the requisite distance from the walls of the building, angled boreholes may be completed beneath the vaults at a depth of approximately 50 feet or less BLS. These boreholes could also be used for spectral gamma borehole logging to detect gamma emitting compounds. Revise closure plan accordingly.

272. If soil sampling is implemented beneath the unit, the analyte list, sampling plan, and performance standards will be determined by the department. In the event that soil sampling beneath the vaults or B Cell cannot be completed, groundwater monitoring could be implemented to determine if clean closure requirements can be met. A valid groundwater monitoring program would require at least four monitoring wells to be installed, with one upgradient well and three downgradient wells, and all located within 75 feet of the periphery of the building. Revise closure plan accordingly.

273. Explain in detail how the soil located beneath B Cell and the vaults will be evaluated for clean closure. Address potential corrective action and post closure. Revise closure plan accordingly.

## 6.0 Closure Strategy and Performance Standards

### General Comments

274. General. The Department of Energy and its contractors have not justified several modifications to the revision 0 (original) version of the closure plan submitted to the Department for review in January of 1996. Valuable information contained in the original version has been deleted from this version. Many of the comments to follow will reflect this comments.

275. General. The future disposition of the building must be presented in order to determine the appropriate level of decontamination and/or removal and establish appropriate closure performance standards. Revise the closure plan to describe the future mission of the building in accordance with the baseline for which current budget requests are based on the 10 year plan.

276. General. Removal actions and waste treatment have and will be conducted as part of the closure activities. Revise the closure plan to describe in detail the removal and treatment process applied to the HLV tank waste. Revise closure plan to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan.

Ecology cannot accept activities if they are inconsistent with the closure regulations or if adequate information is not available to support a determination of consistency with the closure requirement. If Ecology determines activities were inconsistent with the closure requirements and/or if adequate information is not available to determine constancy, Ecology can require facility owner/operators to conduct additional activities, including but not limited to, removal and/or decontamination of wastes, waste residues,

equipment and/or structures, additional sampling and analysis, and/or investigation activities designed to determine the degree to which previously conducted activities comply with closure requirements.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

277. **General.** The closure plan must present all options for closure In every incidence, which refers to this plan, delete "clean closure" and replace with "closure".

278. **General.** Detailed records and a video log must be maintained for waste removal and management, component decontamination, and all other activities proceeding to closure of this unit.

279. **General.** Ancillary equipment to the vaults, such as sumps, drains, and vents must be addressed must be addressed in the closure plan.

280. **General.** The following terms must be defined in the context of the closure; exposed, appropriate, isolation.

281. **General.** The final disposition of all components of the closure and the building must be presented.

#### Text Specific Comments

282. **6-1, 8.** This version of the closure plan was modified to address only clean closure. There is sufficient probability that clean closure may not be achieved for every component of the unit due to the complexity and nature of the facility, and the regulation clearly state the need to address other potential modes of closure (WAC 1730303-640(c)).

Revise closure plan to address the potential for modified and postclosure permitting should it become necessary to implement.

283. **6-1, 8.** Due to the complexity and nature of the facility it must be described in detail why, at a minimum an integrity assessment is not proposed for the vault structure. A more rigorous demonstration of the integrity of the vaults must be performed. Note; Ecology previously has clearly objected to deleting the integrity assessments from the closure strategy. In light of the corrosive waste which was spilled on the B Cell floor and the equipment which was inevitably dropped from significant elevations due to the remote handle the integrity of the cell liner is question. Because the facility lacks a future mission it has not been justified why the vaults are not removed as part of the closure activities. Revise closure plan accordingly.

The inspections alone will not achieve closure performance standards and therefore will not allow clean closure to occur. Visual inspections are not sufficient to demonstrate "clean closure" of soil. Revise closure plan accordingly.

Postclosure must be incorporated into the closure plan.

284. **6-1, 8.** Revise the first sentence to delete the words "building" and "clean". Revise the language to read "the TSD portions of the 324 REC will pursue clean closure. If clean closure is not attainable then modified or postclosure, which ever is appropriate, will be implemented".

285. Delete "with respect to dangerous waste contamination that resulted from the treatment or storage of dangerous waste for greater than 90 days". The debris rule and removal actions proposed as closure performance standards are physical demonstrations and are not specific to a constituent.

286. 6-1, 8. Because the consent order consisting of M-89 directed closure activities to occur prior to the development of an approved closure plan, it must be incorporated into the closure strategy.

287. 6-1, 14. The term "miscellaneous building areas" needs to be physically defined. Modify text accordingly.

288. 6-1, 15. The statement "Remedial actions with respect to contamination that was not a result of use of these areas for treatment or storage of dangerous waste are outside the scope of this closure plan and will be performed as part of the Facility Decommissioning process" is inconsistent with page 1-2 which states that "all areas of the 324 Building were considered when defining the boundary for closure. Revise text accordingly.

Remember, while requirements for removal and/or decontamination during closure apply to all dangerous waste, dangerous waste constituents and dangerous waste residues (including decomposition products) and all equipment, bases, liners, soils/subsoil, or other material containing or contaminated with dangerous waste, constituents or residues, only materials intended for disposal are subject to LDR requirements. Revise closure plan accordingly.

289. 6-1, 22. Removal actions and waste treatment have been, and will be conducted, as part of the closure activities. Therefore revise the closure plan to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan. Revise closure plan accordingly.

Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because they directed closure activities prior to the development of an approved closure plan. Revise closure plan accordingly.

290. In every incidence, which refers to this plan, delete "clean closure" and replace with "closure". Revise closure plan accordingly.

In addition, the term "decontaminating" must be defined in the closure plan. In defining the term it must be correlated with the applicable section of the Dangerous Waste regulations. Revise closure plan accordingly.

291. 6-1, 25. Delete "clean closure of the soil" from this sentence. It must be demonstrated that this unit has not impacted the soil. Even if such a demonstration was successful it would only restrict the boundary of the unit to not contain the underlying soil, it would not mean the soil was clean closed. In order to clean close the soil full characterization in accordance with the Dangerous Waste regulations must occur. Revise closure plan accordingly.

292. Provide rationale for leaving vaults in place if the vault tanks are removed rendering no future use for the vaults. The final disposition of the vaults must be addressed. Specify how the vaults will be monitored, maintained, and ultimately dispositioned, and the timeline for such activities. Revise closure plan accordingly.

293. 6-1, 27. The proposed inspections must be demonstrated to be capable of detecting containment failure before Ecology will consider the proposal as a closure activity.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed: MTCA levels or levels specified by the Department.

The future disposition must be presented in order to determine the appropriate level of decontamination and/or removal and establish appropriate closure performance standards. Revise the closure plan to describe the future mission of the building in accordance with the baseline for which current budget requests are based or the 10 year plan.

294. There is sufficient probability that clean closure may not be achieved due to the complexity and nature of the facility, and the regulation clearly state the need to address other potential modes of closure (WAC 1730303-640(c)).

Revise closure plan to address the potential for modified and postclosure permitting should it become necessary to implement. The facility contains tanks with secondary containment that does not meet the requirements of WAC 173-303-640(4)(b) through (f) a contingent post-closure plan for complying with WAC 173-303-640(8)(b) [to closure the unit as a landfill].

295. Due to the complexity and nature of the facility it must be described in detail why, at a minimum an integrity assessment is not proposed for the vault structure. It has not been justified why the vaults are not removed as part of the closure activities due to the lack of future mission.

A more rigorous demonstration of the integrity of the vaults must be performed. Note; Ecology previously has clearly objected to deleting the integrity assessments from the closure strategy. In light of the corrosive waste which was spilled on the B Cell floor and the equipment which was inevitably dropped from significant elevations due to the remote handle the integrity of the cell liner is question. Revise closure plan accordingly.

The inspections alone will not achieve closure performance standards and therefore will not allow clean closure to occur. Revise closure strategy accordingly.

296. 6-1, 31. If remediation of the soil is necessary coordinating with the CERCLA remedial action process for the CERCLA operable unit may be appropriate. However, the information provided in the closure plan does not fulfill the Dangerous Waste regulations. All activities to be carried out to fulfill the Dangerous Waste requirements must be spelled out in detail in the closure plan and closure schedule as well as the CERCLA documentation. Revise closure plan accordingly.

297. The milestone for all 300 Area source operable units requires full characterization to occur by December 1999. Therefore the proposal to coordinate closure activities with the CERCLA work would require the full characterization of all activities proposed to occur in conjunction with CERCLA activities and all Dangerous Waste, and RCRA, Applicable, Relevant, and Appropriate Requirements (ARARs) to be identified in both sets of documentation. Revise closure plan accordingly.

298. 6-1, 35. Revise this paragraph to reflect that a permit modification is required if a change in closure strategy occurs after issuance of the closure plan. Insert the following language to address modifications to the closure plan;

The owner or operator may submit a written notification request to the department for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure. A written notification or request for permit modification must be submitted to authorize a change in the approved closure plan whenever, the changes in operating plans or facility design affect the closure plan or there is a change in the expected year of closure, or in conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

299. 6-1, 43. Delete "clean" from the first sentence of section 6.2. Alternatives to clean closure must be addressed in the event that clean closure performance standards can not be achieved. Revise closure plan accordingly.

Revise the first sentence to reflect that closure is being conducted in accordance with WAC 173-303. Further specification can be provided by an additional sentence referring to WAC 173-303-610, delete "(2)" and insert "and WAC 173-303-640".

300. 6-1, 44. Due to inconsistency with regulatory language delete all text following regulatory citation from line 44 to line 46. For all structures, equipment, bases, liners, etc., clean closure standards will be set by the department on a case-by-case basis in accordance with the closure performance standards of WAC 173-303-610 (2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents [WAC 173-303-610 (2)(b)(ii)]. Closure performance standards require the owner or operator to close the facility in a manner that minimizes the need for further maintenance, controls minimizes or eliminates the extent necessary to protect human health and the environment, postclosure escape of dangerous waste, dangerous constituents, leachate, contaminated run-off, or dangerous waste decomposition products to the ground, surface water, ground water, or the atmosphere; and returns the land to the appearance and use of surrounding land areas to the degree possible given the nature of the previous dangerous waste activity [WAC 173-303-610(2)]. Revise closure plan accordingly.

301. This chapter fails to present closure performance standards. Documents are referenced which have no regulatory oversight or enforceability. In additions, the closure plan fails to address regulatory deficiencies noted in Ecology's review of several of these documents. Revise the closure plan to incorporate all Cleanout activities, including activities conducted prior to the implementation of the TPA milestone, M-89 for regulatory review, public comment, and approval. All deficiencies noted in the departments review of such documents must be resolved in incorporating this information from other documents into the closure plan. Address complete closure strategy for closing the unit (i.e., not limited to clean closure). Revise closure plan accordingly.

302. 6-1, 49. Delete "clean" from the sentence. Revise closure plan accordingly.

303. 6-2, 1. Because this closure evolved from the non-compliant storage of dangerous waste it is not appropriate to propose or imply that interim or final status will be pursued. A TSD facility is either permitted for operation, in which extensive requirements of WAC 173-303 must be fulfilled, for which it is highly unlikely this facility could achieve, or is closed. It is not appropriate or feasible to close the unit and then permit unit which would require a second closure. In addition, this language is inconsistent with the TPA milestone, M-89. Revise text accordingly.

304. 6-2, 14. This section must be revised to address each component of the closure.

305. Delete lines 16 - 20. Revise text to reflect that the *decontamination* standard for each specific component (i.e., B Cell liner, Vaults liner and concrete, etc. rather than media) will be achieved via Alternative Treatment Standards for Hazardous Debris rule as promulgated by EPA in August 18, 1992 Federal Register (57 FR 37194).

Revise the text to incorporate the specific treatment technologies of the Alternative Treatment Standards for Hazardous Debris rule to be used for each specific component of the unit. EPA interprets the land disposal restrictions and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure [57 FR 37243]. The closure plan must detail activities conducted in pursuit of closure. This section of the closure plan fails to provide the required detail.

306. 6-2, 22. Delete the first sentence of this paragraph. Revise the text to incorporate a demonstration of how a clean debris surface can be determined. It must be demonstrated that the resolution can achieve the capability to verify that no more than 5% of each square inch of surface area shall be contaminated. Address the influence of remote operation of the camera. Revise closure plan accordingly.

307. 6-2, 29 and 32. Revise the closure plan to explain the relationship of the reference to 40 CFR 268.45 to the closure of a unit being closed in accordance with the Dangerous Waste regulations, WAC 173-303. The following language is provided to assist in revision of the closure plan.

For all structures, equipment, bases, liners, etc., clean closure standards will be set by the department on a case-by-case basis in accordance the closure performance standards and in a manner that minimized or eliminates post-closure escape of dangerous waste constituents. The owner and operator must close the facility in a manner that; minimizes the need for further maintenance, controls, minimizes or eliminates to the extent necessary to protect human health and the environment postclosure escape of dangerous waste, dangerous constituents, leachate, contaminated run-off, or dangerous waste decomposition products to the ground, surface water, ground water, or the atmosphere.

Ecology has chosen to reference the "Alternative Treatment Standards for Hazardous Debris," as promulgated by EPA in August 18, 1992 Federal Register (57 FR 37194) as the *minimum decontamination* standards for closure. Materials are considered decontaminated if they have been treated using an appropriate extraction or destruction technology as specified in the Guidance for Clean Closure of Dangerous Waste Facilities, 1994 and in 40 CFR 268.45, meet the technology specific performance, design, and/or operating standards and, if intended for disposal, the material does not exhibit a dangerous waste characteristic or criteria.

Remember, while requirements for removal and/or decontamination during closure apply to all dangerous waste, dangerous waste constituents and dangerous waste residues (including decomposition products) and all equipment, bases, liners, soils/subsoil, or other material containing or contaminated with dangerous waste, constituents or residues, only materials intended for disposal are subject to LDR requirements. Revise closure plan accordingly.

308. 6-2, 32. This section must be revised to address each component of the closure. Revise text accordingly.

309. Revise text to reflect that the *decontamination* standard for each specific component (i.e., B Cell liner, Vaults liner and concrete, etc. rather than media) will be achieved via Alternative Treatment Standards for Hazardous Debris rule as promulgated by EPA in August 18, 1992 Federal Register (57 FR 37194). The closure plan must detail all activities conducted in pursuit of closure. This section fails to provide the required detail.

Provide a reference to applicable regulations (WAC 173-303). All closure alternatives for each component, not just clean closure, must be presented in detail in the closure plan.

310. -2, 34. See previous comment addressing 6-2, 32. Modify text accordingly.

311. 6-2, 41. Modify this section fails to provide the required detail for activities conducted in pursuit of closure.

312. 6-2, 42. A schedule for closure of each dangerous waste management unit and for final closure of the facility is not adequate, or appropriate to defer to Facility Decommissioning. The schedule must include, at a minimum, the total time required to close each dangerous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. Delete "as soon as feasible" and "but will ultimately". Consult WAC 173-303-610(4) to develop an appropriate schedule. Revise closure plan accordingly.

313. 6-3, 1. The closure process should proceed directly to remove all piping which is proposed as the ultimate disposition. The closure performance standard shall be the removal of all feasibility and reasonably accessible ancillary equipment. The piping of unit shall be removed, designated and disposed of appropriately unless it has specific function beyond the transition of the building. Describe the removal,



designation, and disposition of all piping to be removed and explain the function of piping proposed to be left in place. Detail the removal of the piping. Revise closure plan accordingly.

The proposed management of the unit piping is not consistent with closure regulations or guidance. The flushing and draining is not equivalent to the Alternative Treatment Technologies for Hazardous Debris for metal. Nor can a clean debris surface be demonstrated by extrapolating from the designation based on constituents of concern. The rinsing of pipe may be an appropriate initial step. However, flushing and draining of the piping is not adequate for closure. The rinsate must be designated and managed accordingly but will not satisfy closure performance standards. The constituents of concern can not be used to accurately designate waste. Revise closure plan accordingly.

Removal or decontamination can be performed provided it meets closure performance standards. However, removal should produce a smaller volume of secondary waste, practically eliminate the generation of liquid hazardous waste, and reduce exposure to personnel and the potential for environmental harm.

314. To meet the LDR for hazardous debris it must be treated using an appropriate technology, treated to meet the constituent-specific LDR treatment standard, or petition Ecology for a "contained in" determination that the debris no longer contains dangerous waste.

315. 6-3, 18. The inspection of the liner and exposed concrete does not fulfill the intent of the "debris rule". Ecology considers the "Alternative Treatment Standards for Hazardous Debris," as promulgated in the August 18, 1992 Federal Register (57 FR 37194) as the minimum decontamination standards for closure. Ecology believes the based "Alternative Treatment Standards for Hazardous Debris represent the best demonstrated available technology (BDAT) for materials typically subject to decontamination during the closure process and as such, are appropriate *minimum standards for closure decontamination*. EPA interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure.

The proposed inspection does not meet the clean debris surface because it has not implemented the Alternative Treatment Standards for Hazardous Debris. In addition it must be demonstrated that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved. Inspections are an appropriate step if conducted in conjunction with other closure activities.

Revise the closure plan to delete lines 18 through 27. Inspections are not adequately rigorous integrity assessments due to the nature of waste and management practices which occurred at this facility. In addition, the soil is not addressed by the applicability of the Debris Rule to the components of the unit.

316. 6-3, 25. The proposed closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented.

Coordination of characterization and remediation *may* be coordinated with CERCLA remedial actions where appropriate. However, all characterization and remediation activities and associated schedule for implementation (as well as all other ARARs proposed to be met by the CERCLA process) must be presented in detail in the closure plan. Soil characterization may be necessary to determine if clean closure is appropriate. Describe the coordination of information, funding and activities (compliance with closure schedule, ARARs, post-closure, etc.). Note, all CERCLA characterization in the 300 Area is to be complete by December 1999 in accordance with M-15. Revise closure plan accordingly.

The TPA milestone M-15 requires full characterization of all 300 Area source operable units by December 1999. Therefore the proposal to coordinate closure activities with the CERCLA work would require all activities proposed to occur in conjunction with CERCLA and all Dangerous Waste and RCRA ARAR's identified in both sets of documentation. Revise closure plan accordingly.

317. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented. Revise closure plan accordingly.

318. 6-3, 30. The miscellaneous building areas discussed should be placed in the appropriate sections of the closure plan (i.e., hotcell structures for airlock and ancillary equipment for the pipe trench).

319. 6-3, 35. Isolations of the pipe trench "administratively" was not agreed to by Ecology. Revise closure plan accordingly.

320. 6-3, 45. Revise closure plan to explain why the removal of the vault system is not presented as a closure activities.

321. 6-4, 4. The closure states "[b]efore initiating closure activities for B-Cell, all dangerous and mixed waste inventory will be removed as part of the BCCP".

Multiple revisions of the B-Cell Clean Out Project Plan exist. The 1995 version of the BCCP was submitted to Ecology in accordance with the TPA milestone M-89. Ecology provided extensive regulatory review comments for the BCCP submitted explaining its deficiencies and how the activities conducted under this relate to closure of the facility. Activities conducted under the BCCP must be incorporated into the closure plan. Specify how Ecology comments generated on the BCCP are to be addressed in the closure plan.

This section does not address closure activities or performance standards. Revise plan to incorporate all Cleanout activities (including prior to M-89) for regulatory review, public comment, and approval. Present the complete closure strategy for closure of the entire unit. The ultimate disposition of the facility must also be presented in order to determine the appropriate closure strategy.

Note, Ecology cannot accept activities if they are inconsistent with the closure regulations or if adequate information is not available to support a determination of consistency with the closure requirement. If Ecology determines activities were inconsistent with the closure requirements and/or if adequate information is not available to determine constancy, Ecology can require facility owner/operators to conduct additional activities, including but not limited to, removal and/or decontamination of wastes, waste residues, equipment and/or structures, additional sampling and analysis, and/or investigation activities designed to determine the degree to which previously conducted activities comply with closure requirements.

322. 6-4, 7. The debris rule is not adequately presented in the closure plan. Implementation of the specific treatment technologies is not addressed and the inspection has not been demonstrated to be capable of meeting the stipulations of the Alternative Treatment Standards for Hazardous Debris.

The inspection of the liner and exposed concrete does not fulfill the intent of the "debris rule". The rule is based "Alternative Treatment Standards for Hazardous Debris," as promulgated in the August 18, 1992 Federal Register (57 FR 37194) as the *minimum decontamination standards for closure*. Ecology believes the based "Alternative Treatment Standards for Hazardous Debris represent the best demonstrated available technology (BDAT) for materials typically subject to decontamination during the closure process and as such, are appropriate minimum standards for closure decontamination. EPA interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure. Revise closure plan accordingly.

Therefore, the proposed inspection does not meet the clean debris surface because it does not implemented the Alternative Treatment Standards for Hazardous Debris. In addition it must be demonstrated that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved. Revise closure plan accordingly.

Note: the soil is not addressed by the application of the debris rule to the components of the unit. Revise closure plan accordingly.

Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris for each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

It must be demonstrated that the proposed inspections could indicate containment failure before they could be considered as a legitimate closure activity.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

323. The future disposition of the building must be presented in order to determine the appropriate level of decontamination and/or removal and establish appropriate closure performance standards. Revise the closure plan to describe the future mission of the building in accordance with the baseline for which current budget requests are based or the 10 year plan.

324. There is sufficient probability that clean closure may not be achieved due to the complexity and nature of the facility, and the regulation clearly state the need to address other potential modes of closure (WAC 1730303-640(c)). Revise closure plan to address the potential for modified and postclosure permitting should it become necessary to implement.

Due to the complexity and nature of the facility it must be described in detail why, at a minimum an integrity assessment is not proposed for the vault structure. It has not been justified why the vaults are not removed as part of the closure activities due to the lack of future mission.

A more rigorous demonstration of the integrity of the vaults must be performed. Revise closure plan accordingly. The inspections alone will not achieve closure performance standards and therefore will not allow clean closure to occur. Revise closure strategy accordingly.

325. 6-4, 10. Revise the closure plan to delete line 10 through 12. The Debris Rule is not intended to demonstrate or evaluate the integrity of the components for which it is being applied.

326. 6-4, 14. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented.

Coordination of characterization and remediation may be coordinated with CERCLA remedial actions where appropriate. However, all characterization and remediation activities and associated schedule for implementation (as well as all other ARARA's proposed to be met by the CERCLA process) must be presented in detail in the closure plan. Soil characterization may be necessary to determine if clean closure is appropriate.

Describe the coordination of information, funding and activities (compliance with closure schedule, ARARs, post-closure, etc.). Note, all CERCLA characterization in the 300 Area is to be complete by December 1999 in accordance with M-15. Revise text accordingly.

327. 6-4, 18. To be evaluated for the ability to meet closure performance standards the method of decontamination must be described in detail and associated with an Alternative Treatment Standards for Hazardous Debris

328. 6-4, 20. Revise the closure to explain the demonstration that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved. Demonstration of resolution to determine if performance standards have been met.

329. 6-4, 26. Modify the closure plan to present all closure performance standards in addition to the clean debris rule standard must be presented. Explain how the closure activities will proceed if the clean debris surface is not achieved. Potential soil contamination must also be addressed.

330. 6-4, 46. The removal of the dangerous mixed waste inventory from the HLV and LLV are closure activities and must be presented in the closure plan.

331. 6-5, 12. The inspection of the liner and exposed concrete does not fulfill the intent of the "debris rule". Ecology considers the "Alternative Treatment Standards for Hazardous Debris," as promulgated in the August 18, 1992 Federal Register (57 FR 37194) as the minimum decontamination standards for closure. Ecology believes the based "Alternative Treatment Standards for Hazardous Debris represent the best demonstrated available technology (BDAT) for materials typically subject to decontamination during the closure process and as such, are appropriate minimum standards for closure decontamination. EPA interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure.

Therefore, the proposed inspection does not meet the clean debris surface because it has not implemented the Alternative Treatment Standards for Hazardous Debris. In addition it must be demonstrated that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved.

In addition, the soil is not addressed by the applicability of the debris rule to the components of the unit.

332. 6-5, 15. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented.

Coordination of characterization and remediation may be coordinated with CERCLA remedial actions where appropriate. However, all characterization and remediation activities and associated schedule for implementation (as well as all other ARARs proposed to be met by the CERCLA process) must be presented in detail in the closure plan. Soil characterization may be necessary to determine if clean closure is appropriate. Describe the coordination of information, funding and activities (compliance with closure schedule, ARARs, post-closure, etc.). Note, all CERCLA characterization in the 300 Area is to be complete by December 1999 in accordance with M-15. Revise closure plan accordingly.

The TPA milestone M-15 requires full characterization of all 300 Area source operable units by December 1999. Therefore the proposal to coordinate closure activities with the CERCLA work would require all activities proposed to occur in conjunction with CERCLA and all Dangerous Waste and RCRA ARAR's identified in both sets of documentation. Revise closure plan accordingly.

333. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented. Revise closure plan accordingly.

334. 6-5, 19. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented.

Coordination of characterization and remediation *may* be coordinated with CERCLA remedial actions where appropriate. However, all characterization and remediation activities and associated schedule for implementation (as well as all other ARARs proposed to be met by the CERCLA process) must be presented in detail in the closure plan. Soil characterization may be necessary to determine if clean closure is appropriate. Describe the coordination of information, funding and activities (compliance with closure schedule, ARARs, post-closure, etc.). Note, all CERCLA characterization in the 300 Area is to be complete by December 1999 in accordance with M-15. Revise closure plan accordingly.

The TPA milestone M-15 requires full characterization of all 300 Area source operable units by December 1999. Therefore the proposal to coordinate closure activities with the CERCLA work would require all activities proposed to occur in conjunction with CERCLA and all Dangerous Waste and RCRA ARAR's identified in both sets of documentation. Revise closure plan accordingly.

335. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented. Revise closure plan accordingly.

336. 6-5, 24. Options other than the clean debris rule standard must be presented. Explain how the closure activities will proceed if the clean debris surface is not achieved. Potential soil contamination must also be addressed.

337. 6-5, 31. The closure process should proceed directly to remove all piping which is proposed as the ultimate disposition. The closure performance standard shall be the removal of all feasibility and reasonably accessible ancillary equipment. The piping of unit shall be removed, designated and disposed of appropriately unless it has specific function beyond the transition of the building. Describe the removal, designation, and disposition of all piping to be removed and explain the function of piping proposed to be left in place. Detail the removal of the piping. Revise closure plan accordingly.

The proposed management of the unit piping is not consistent with closure regulations or guidance. The flushing and draining is not equivalent to the Alternative Treatment Technologies for Hazardous Debris for metal. Nor can a clean debris surface be demonstrated by extrapolating from the designation based on constituents of concern. The rinsing of pipe may be an appropriate initial step. However, flushing and draining of the piping is not adequate for closure. The rinsate must be designated and managed accordingly but will not satisfy closure performance standards. The constituents of concern can not be used to accurately designate waste. Revise closure plan accordingly.

Removal or decontamination can be performed provided it meets closure performance standards. However removal should produce a smaller volume of secondary waste, practically eliminate the generation of liquid hazardous waste, and reduce exposure to personnel and the potential for environmental harm.

To meet the LDR for hazardous debris it must be treated using an appropriate technology, treated to meet the constituent-specific LDR treatment standard, or petition Ecology for a "contained in" determination that the debris no longer contains dangerous waste.

338. 6-5, 37. Modify closure plan to describe criteria to determine which piping is to remain in place and that to be removed.

339. 6-5, 43. The proposed management of the unit piping is not consistent with closure regulations or guidance. The flushing and draining is not equivalent to the Alternative Treatment Technologies for Hazardous Debris for metal. Nor can a clean debris surface be demonstrated by extrapolating from the designation based on constituents of concern. Revise closure plan accordingly.

Removal or decontamination can be performed provided it meets closure performance standards. However removal should produce a smaller volume of secondary waste, practically eliminate the generation of liquid

hazardous waste, and reduce exposure to personnel and the potential for environmental harm. Revise closure plan accordingly.

340. 6-5, 48. The closure plan does not provide adequate detail to determine if it is appropriate to leave piping in place. Revise plan accordingly. Refer to WAC 173-303-610 (3) for guidance on required contents of a closure plan.

341. 6-6, 1. The closure plan does not provide adequate detail to determine if it is appropriate to leave piping in place or what piping is being isolated. Refer to WAC 173-303-610 (3) for guidance on required contents of a closure plan.

342. Table 6-1. Provide a column in the table, or footnotes, which indicate the appropriate section(s) of the text which provide the detailed descriptions of work to be performed as described in the table.

Designation limits for piping rinsate will not achieve the clean debris surface. In addition, "or removal" is confusing. Delineate between what piping is to be removed and what will remain in place.

## 7.0 Closure Activities

### General Comments

343. General. The Department of Energy and its contractors have not justified several modifications to the revision 0 (original) version of the closure plan submitted to the Department for review in January of 1996. Valuable information contained in the original version has been deleted from this version. Many of the comments to follow will reflect this comments.

344. General. The future disposition of the building must be presented in order to determine the appropriate level of decontamination and/or removal and establish appropriate closure performance standards. Revise the closure plan to describe the future mission of the building in accordance with the baseline for which current budget requests are based or the 10 year plan.

345. General. Removal actions and waste treatment have and will be conducted as part of the closure activities. Revise the closure plan to describe in detail the removal and treatment process applied to the HL V tank waste. Revise closure plan to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

346. General. In every incidence, which refers to this plan, delete "clean closure" and replace with "closure".

347. General. Ecology will not allow clean closure of this unit if it can not be demonstrated that it has not maintained integrity. If soil has been contaminated by this unit, characterization and cleanup of contamination from this facility must be presented in the closure plan. Any coordinated activities must present performance standards and schedule for completion.

348. General. Detailed records and a video log must be maintained for waste removal and management, component decontamination, and all other activities proceeding to closure of this unit.

349. General. The closure plan must present all options for closure.

350. General. Chapter 7 must address the following. RCRA/CERCLA coordination, impacts of radiation, and Radioactive Liquid Waste System (RLWS) piping within the building

351. General. Notice to local land authority and Notice in deed to property must be described in the closure plan

#### Text Specific Comments

352. 7-1, 4. This version of the closure plan was modified to address only clean closure. Clean closure may not be achieved due to the complexity and nature of the facility, and the regulation clearly state the need to address other potential modes of closure (WAC 1730303-640(c)).

Revise closure plan to address the potential for modified and postclosure permitting should it become necessary to implement.

353. 7-1, 4. Revise the first sentence to delete the words "building" and "clean". Revise the language to read "the TSD portions of the 324 REC will pursue clean closure. If clean closure is not attainable then modified or postclosure, which ever is appropriate, will be implemented in accordance with WAC 173-303.

354. 7-1, 7. Removal actions and dangerous waste treatment have and will be conducted as part of the closure activities. Therefore revise this section to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan. Revise closure plan accordingly.

Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because it directed closure activities prior to the development of an approved closure plan. Revise closure plan accordingly.

In addition, the term "decontaminating" must be defined in the closure plan. In defining the term it must be correlated with the applicable section of the Dangerous Waste regulations. Revise closure plan accordingly.

355. In every incidence, which refers to this plan, delete "clean closure" and replace with "closure". Revise closure plan accordingly.

356. 7-1, 9. Remove ", as necessary, and". Insert "or removal of" after "decontaminating" and "to demonstrate" in place of "demonstrating". Revise closure plan accordingly.

357. 7-1, 10. Due to the complexity and nature of the facility, the closure plan must describe in detail why DOE has changed its proposed closure strategy, which included integrity assessment, without demonstrating that the proposed inspections are at least as rigorous in evaluating the integrity of the unit. Modify the text to justify why the integrity assessments been deleted from the closure strategy. Note: Ecology previously has clearly objected to deleting the integrity assessments from the closure strategy. In light of the corrosive waste which was spilled on the B Cell floor and the equipment which was inevitably dropped from significant elevations due to the remote handle the integrity of the cell liner is question. Revise closure plan accordingly.

358. Visual inspection is not sufficient to demonstrate "clean closure" of soil. Revise closure plan accordingly.

359. Postclosure must be incorporated into the closure plan. Revise closure plan accordingly.

360. 7-1, 10. Delete "clean closure of the soil" from this sentence. It must be demonstrated that this unit has not impacted the soil. Even if such a demonstration was successful it would only restrict the boundary of the unit to not contain the underlying soil. it would not mean the soil was clean closed. In

order to clean close the soil full characterization in accordance with the Dangerous Waste regulations must occur. Revise closure plan accordingly.

361. Provide rationale for leaving vaults in place if the tanks are removed rendering no future use for the vaults. The final disposition of the vaults must be addressed. Specify how vaults will they be monitored, maintained, and ultimately removed, and the timeline for such activities. Revise closure plan accordingly.

362. 7-1, 12. Coordination of characterization and remediation *may* be coordinated with CERCLA remedial actions where appropriate. However, all characterization and remediation activities and associated schedule for implementation (as well as all other ARARs proposed to be met by the CERCLA process) must be presented in detail in the closure plan. Soil characterization may be necessary to determine if clean closure is appropriate. Describe the coordination of information, funding and activities (compliance with closure schedule, ARARS, post-closure, etc.). Note, all CERCLA characterization in the 300 Area is to be complete by December 1999 in accordance with M-15. Revise closure plan accordingly.

The TPA milestone M-15 requires full characterization of all 300 Area source operable units by December 1999. Therefore the proposal to coordinate closure activities with the CERCLA work would require all activities proposed to occur in conjunction with CERCLA and all Dangerous Waste and RCRA ARAR's identified in both sets of documentation. Revise closure plan accordingly.

363. The closure strategy presented does not address the potential for underlying soil contamination and contingent post closure. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented. Revise closure plan accordingly.

364. 7-1, 17. It must be demonstrated that the proposed inspections could indicate containment failure before they will be considered as a legitimate closure activity.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

365. The future disposition of the building must be presented in order to determine the appropriate level of decontamination and/or removal and establish appropriate closure performance standards. Revise the closure plan to describe the future mission of the building in accordance with the baseline for which current budget requests are based or the 10 year plan.

366. There is sufficient probability that clean closure may not be achieved due to the complexity and nature of the facility, and the regulation clearly state the need to address other potential modes of closure (WAC 1730303-640(c)). Revise closure plan to address the potential for modified and postclosure permitting should it become necessary to implement.

367. Due to the complexity and nature of the facility it must be described in detail why, at a minimum an integrity assessment is not proposed for the vault structure. It has not been justified why the vaults are not removed as part of the closure activities due to the lack of future mission.

A more rigorous demonstration of the integrity of the vaults must be performed. Revise closure plan accordingly. The inspections alone will not achieve closure performance standards and therefore will not allow clean closure to occur. Revise closure strategy accordingly.

368. 7-1, 21. This section is confusing due to inconsistencies with the chapter 1 description of the Radiochemical Engineering Cells. Revise closure plan accordingly.



369. 7-1, 24. The debris rule is not adequately presented in the closure plan. Implementation of the specific treatment technologies is not addressed and the inspection has not been demonstrated to be capable of meeting the stipulations of the Alternative Treatment Standards for Hazardous Debris.

The inspection of the liner and exposed concrete does not fulfill the intent of the "debris rule". The rule is based "Alternative Treatment Standards for Hazardous Debris," as promulgated in the August 18, 1992 Federal Register (57 FR 37194) as the *minimum decontamination standards for closure*. Ecology believes the based "Alternative Treatment Standards for Hazardous Debris represent the best demonstrated available technology (BDAT) for materials typically subject to decontamination during the closure process and as such, are appropriate minimum standards for closure decontamination. EPA interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure. Revise closure plan accordingly.

Therefore, the proposed inspection does not meet the clean debris surface because it does not implemented the Alternative Treatment Standards for Hazardous Debris. In addition it must be demonstrated that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved. Revise closure plan accordingly.

Note: the soil is not addressed by the applicability of the debris rule to the components of the unit. Revise closure plan accordingly.

Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris for each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

370. 7-1, 26. Procedures for isolating the airlock and pipe trench must be presented in the closure plan. Demonstrate that hazardous and mixed waste will not remain in these components, and that these components have a future mission. Address ancillary equipment to the LLV and tanks.

371. 7-1, 32 and 35. Due to the proposed closure strategy of implementing the Debris Rule and removal actions on components of the unit "constituents of concern" and "major constituents of concern" have little bearing on the closure of the hotcells, piping, and tanks.

Revise this section of the plan to explain how constituents of concern relate to the closure of this unit.

372. All material generated from decontamination or removal action must be designated and managed in accordance with WAC 173-303, which is not limited to constituents of concern.

373. 7-1, 42. Removal actions and waste treatment have and will be conducted as part of the closure activities. Therefore revise this section to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan. Revise closure plan accordingly.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because it directed closure activities prior to the development of an approved closure plan. Revise closure plan accordingly.

The closure plan must incorporate removal actions conducted under the BCCP. Revise closure plan accordingly.

374. 7-2, 1. Removal actions and waste treatment have and will be conducted as part of the closure activities. Therefore revise this section to include such activities. The department will not allow clean closure based solely on the decontamination as presented in this closure plan.

The Dangerous Waste regulations, WAC 173-303-610(2) closure performance standards require the removal or decontamination of dangerous wastes, waste residues, or equipment, bases, liners, soils or other material containing or contaminated with dangerous wastes or waste residue, such removal or decontamination must assure that the levels of dangerous waste or dangerous waste constituents or residues do not exceed MTCA levels or levels specified by the Department.

Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because it directed closure activities prior to the development of an approved closure plan. Revise closure plan accordingly.

The closure plan must incorporate removal actions conducted under the BCCP. Revise closure plan accordingly.

375. The debris rule is not adequately presented in the closure plan. Implementation of the specific treatment technologies is not addressed and the inspection has not been demonstrated to be capable of meeting the stipulations of the Alternative Treatment Standards for Hazardous Debris.

The inspection of the liner and exposed concrete does not fulfill the intent of the "debris rule". The rule is based "Alternative Treatment Standards for Hazardous Debris," as promulgated in the August 18, 1992 Federal Register (57 FR 37194) as the minimum decontamination standards for closure. Ecology believes the based "Alternative Treatment Standards for Hazardous Debris represent the best demonstrated available technology (BDAT) for materials typically subject to decontamination during the closure process and as such, are appropriate *minimum standards for closure decontamination*. EPA interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure.

Therefore, the proposed inspection does not meeting the clean debris surface because it has not implemented the Alternative Treatment Standards for Hazardous Debris. In addition it must be demonstrated that the resolution of the inspection is rigorous enough to determine if the clean debris surface can be achieved.

In addition, the soil is not addressed by the applicability of the debris rule to the components of the unit.

Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris for each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

376. 7-2, 2, 12, 15, 21, 44. Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris for each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

377. 7-2, 15. Revise closure plan to specify if, or what, inspections will be performed remotely. Demonstrate how the use of remote camera could achieve the resolution necessary to determine if the clean debris surface has been achieved.

378. 7-2, 17. Revise closure plan to provide criteria which would determine if portions of the hotcell would have to be removed. Then describe the procedure for removing contaminated portions. Specify the fate of the remaining portions of the hotcell should portions of the cell be removed.

379. 7-2, 23. Revise closure plan to replace "could" with "will" in reference to other techniques to be applied if visual inspections are inconclusive or are not capable of the required resolution.

380. 7-2, 24. The word "inspection" is inappropriately used in referring to procedure for conducting the Liquid penetrant technique. Revise text accordingly.

381. 7-2, 34. Revise closure plan to specify if, and under what circumstances, other integrity testing will be applied. Compare these techniques with those typically applied to assessing the integrity of a hazardous waste tank system.

382. 7-2, 44. Revise closure plan to delete this paragraph. Ecology will not allow clean closure of this unit if it can not be demonstrated that it has not maintained integrity. If soil has been contaminated by this unit, characterization and cleanup of contamination from this facility must be presented in the closure plan. Any coordinated activities must present performance standards and schedule for completion.

The closure plan must present all options for closure.

383. 7-3, 17. The treatment of waste which occurred in D-Cell was conducted and approved as a closure activity. The continued use of this process outside the scope of this closure is prohibited. Therefore, at termination of the closure of this facility, the equipment utilized to treat the HLV tank waste must be managed in accordance with the Dangerous Waste regulations WAC 173-303.

Revise the closure plan to delete "or as soon as it is determined that this equipment is no longer needed,".

384. 7-3, 25. Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris for each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

385. 7-3, 33. The detailed procedures for isolating ancillary equipment must be incorporated into the closure plan.

Ecology did not agree by choice to administrative isolation of the pipe trench. At the time of the DQO isolation was presented as the only alternative. It is preferred that the piping be removed to minimize the need for further maintenance and monitoring, and the need to readdress at a later date.

386. 7-3, 42. Revise the closure plan to specify the functional components to remain in place

Revise closure plan to provide criteria which would determine portions to be removed. Then describe the procedure for removing contaminated portions. Specify the fate of the remaining portions.

387. Revise the closure plan to describe in detail the removal and treatment process applied to the HLV tank waste. Delete "Before initiating closure activities,".

388. 7-3, 45. Revise the closure plan to delete "where possible."

Revise the closure plan to explain why vaults are proposed to remain in place

389. 7-3, 46. Cite to 40 CFR 268. It is recommended to avoid confusion that the closure plan refer to Guidance for Clean Closure of Dangerous Waste Facilities, Washington State Department of Ecology, August 1994, Publication #94-111.

390. 7-3, 47. The closure plan must present the detailed procedures for closing the LLV system. A separate section should be devoted to closure of these components of the unit.

391. The management of waste which occurred in D-Cell was conducted and approved as a closure activity. The continued use of the LLV is prohibited beyond closure of this unit. Therefore, at termination of the closure of this facility, the LLV must be managed in accordance with the Dangerous Waste regulations WAC 173-303.

Revise the closure plan to delete “, or as soon as it is determined that this equipment is no longer needed,”. All activities must be incorporated in to a schedule for closure.

392. 7-4, 7. Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris to be applied to each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil. Revise closure plan accordingly.

Due to the proposed closure strategy of implementing the Debris Rule and removal actions on components of the unit “constituents of concern” and “major constituents of concern” have little bearing on the closure of the hotcells, piping, and tanks.

393. All material generated from decontamination or removal action must be designated and managed in accordance with WAC 173-303, which is not limited to constituents of concern. Revise this section of the plan to explain how constituents of concern relate to the closure of this unit.

394. Revise the closure plan to describe the removal and treatment applied to tank waste. Describe the status of the tanks and the waste which was removed. Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because it directed closure activities prior to the development of an approved closure plan.

395. 7-4, 15. Revise the closure plan to provide a detailed description of the removal of activities.

396. 7-4, 21. Revise the closure plan to specify the function of components to remain active and/or in place in the vaults (and other areas of unit).

Revise the closure plan to explain why vaults are not being removed.

397. 7-4, 23. The proposed activity of visual inspection of the vault liner and exposed concrete does not fulfill the alternative treatment technologies for hazardous debris. The proposal does not treat the debris in any way and the entire surface is not being inspected to achieve the required less than 5% of a square inch detection of contamination.

Recommend removing the liner and following appropriate treatment. Then scabble the concrete. Demonstrate the function of structures to remain in place

Explain why inspections must be performed remotely

398. 7-4, 26. Revise the closure plan to describe in detail procedures for assessing cracks and the criteria for determining cracks and how cracks will be documented and tracked.

399. 7-4, 31. Delete "possible" and ", or by other appropriate methods". Revise closure plan to specify decontamination procedures from the Alternative Treatment Standards for Hazardous Debris to be applied to each component of the unit, demonstrate that each decontamination procedure is appropriate for the component, and then demonstrate how the inspections will achieve the resolution to determine if the clean debris surface has been achieved. As noted previously, the debris rule is not applicable to soil.

400. 7-4, 36. The proposed activity of visually inspecting the vault liner and exposed concrete does not fulfill the alternative treatment technologies for hazardous debris. The proposal does not treat the debris in any way and the entire surface is not being inspected.

Recommend removing the liner and following appropriate treatment. Then scabble the concrete.  
Demonstrate the function of structures to remain in place

401. 7-4, 44. Revise closure plan to specify the function of components to remain in place in the vaults

Revise closure plan to justify why vaults are not being removed.

402. Revise closure plan to specify which piping will be addressed during Facility Decommissioning and in accordance with what regulations. Provide references to documentation of Facility Decommissioning protocol. Specify maintenance and monitoring to be applied to the piping until decommissioning.

403. Revise the last sentence to reflect that piping between the LLV and the Sodium Removal Pilot Plant will be addressed in closure of the unit.

404. 7-5, 1. The detailed procedures for isolating ancillary equipment must be incorporated into the closure plan.

Ecology did not agree by choice to administrative isolation of the pipe trench. At the time of the DQO isolation was presented as the only alternative. It is preferred that the piping be removed to minimize the need for further maintenance and monitoring, and the need to readdress at a later date.

405. 5, 8. Revise this section to address equipment ancillary to B-Cell, including sumps.

The detailed procedures for isolating ancillary equipment must be incorporated into the closure plan.

Ecology did not agree by choice to administrative isolation of the pipe trench. At the time of the DQO isolation was presented as the only alternative. It is preferred that the piping be removed to minimize the need for further maintenance and monitoring, and the need to readdress at a later date.

406. 7-5, 11. Clarify the relevance of this study to the closure of this unit or delete reference to the closure plan. Revise closure plan accordingly.

407. 7-5, 14. During closure all contaminated equipment, structures and soils must be properly disposed of or decontaminated. By removing any dangerous wastes or dangerous constituents, or potentially contaminated components, during closure, the owner or operator may become a generator of dangerous waste and must handle that waste in accordance with all applicable requirements of WAC 173-03-170 through 230. Revise closure plan accordingly.

The piping once removed is a waste. The piping removed must be designated in accordance with WAC 173-303. Constituents of concern do not apply to the designation of waste generated in a closure process.

408. 7-5, 23. All closure alternatives must be addressed including partial and postclosure. Revise closure plan accordingly.

409. Demonstrate how the evaluation process, which needs to be detailed in the closure plan, can determine the potential for soil contamination. Revise closure plan accordingly.

410. 7-5, 31. Define "isolate" and "removal". Revise closure plan accordingly.

411. 7-5, 40. Revise closure plan to specify if piping and sump components will be removed from the B Cell, HLLV and LLV as well as the pipe trench.

Provide to the department all knowledge of free liquid ever present in the sump at any time. This is relevant to determination of integrity since an integrity assessment has not been performed on the sump or vault liners since installation in the mid-1960's.

412. 7-5, 44. Noting of cracks is not adequate to verify the vault system maintained integrity. Revise the closure plan to explain why the vaults must remain in place.

413. All ARARs proposed to be addressed through the CERCLA process must be detailed in the closure plan. Revise closure plan accordingly.

414. All potential closure scenarios must be addressed in the closure plan. Describe partial and postclosure to be implemented if necessary. Revise closure plan accordingly.

415. 7-6, 13, 16, 19. Delete "could be" and replace with "will be". Revise closure plan accordingly.

416. 7-6, 33. A schedule for closure of each dangerous waste management unit and for final closure of the facility is required per WAC 173-303-610 (3)(a)(vii). The schedule must include, at a minimum, the total time required to closure each dangerous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all dangerous waste inventory and of the time required to place a final cover must be included). Revise closure plan accordingly.

The closure plan is required to provide a detailed description of the steps needed to remove or decontaminate all dangerous waste residues and contaminated containment system components, equipment, structures and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standards. Inventory removal is considered a closure activity and shall be described in the closure plan.

The closure plan is required to provide a detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including but not limited to, ground water monitoring, leachate collection, land run-on and run-off control...

417. 7-6, 38. Delete "studies will be conducted to assist and validate the technical baseline development. The dates provided in this schedule will be reevaluated after these studies are complete". Revise closure plan accordingly.

418. 7-6, 43. Revise this paragraph to reflect that a permit modification is required if a change in closure strategy occurs after issuance of the closure plan. Insert the following language to address modifications to the closure plan:

The owner or operator may submit a written notification request to the department for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure. A written notification or request for permit modification must be submitted to authorize a change in the approved closure plan whenever; the changes in operating plans or facility design affect the closure plan or there is a change in the expected year of closure, or in conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

419. 7-7, 1. Within sixty days of completion of closure of each dangerous waste management unit (including tank systems and container storage areas), and within sixty days of the completion of final closure, the owner and operator must submit to the department by registered mail, a certification that the dangerous waste management unit or facility, has been closed in accordance with the specification in the approved closure plan. The certification must be signed by the owner and operator and by an independent registered professional engineer. Documentation supporting certification by the independent, registered professional engineer shall be furnished to the Department with the certification for closure.

420. Figure 7-1. Debris rule 'clean debris surface' checklist.

Decontamination must occur. Visual inspection must be demonstrated to be capable of achieving resolution necessary to detect defects or contamination of no more than 5% of each square inch of surface area. Address how each square inch of each component will be inspected. Photo and/or video logs shall be maintained on all 'clean debris surface' determinations

Qualification/capabilities of the inspector and "Authorized representative" must be defined in the closure plan.

The title, Sample Clean Debris Surface Checklist, requires revision because it implies sampling will be conducted for which none is proposed

421. Figure 7-2. Activities conducted in accordance with the consent order of M-89, and implementing documents (BCCP, PMP, Feasibility Plan) must be incorporated into the closure strategy because it directed closure activities prior to the development of an approved closure plan. Revise closure plan accordingly.

Incorporate all activities conducted in accordance to the TPA milestone M-89 into the closure schedule.

422. Figure 7-3. The closure certification must be signed by both the owner and operator. Revise closure plan accordingly.

423. Table 7-1. Revise the closure plan to incorporate of a diagram of all piping from, and within, the unit being closed to all sumps, tanks, RLWS, Retention Process Sewer, Sanitary sewer, and ancillary equipment. Color code what will be removed, decontaminated and left in place, and that to remain active following closure of the unit.

## 8.0 Postclosure

### General Comments

424. General. Chapter 8 0, postclosure fails to fully address WAC 173-303-610 (7), (8), (9), (10) and (11), and WAC 173-303-640 (8). Modify text accordingly.

425. General. Modify text to explain why the requirements of WAC 173-303-640(2) Assessment of existing tank system's integrity is not being implemented in evaluating the LLV and HLV tanks and ancillary equipment. Explain how the proposed visual inspection if to fulfill the assessment requirements.

426. General. Submit to the Department copies of any documentation indicating the presence of liquids in the HLV and LLV vaults and/or sumps throughout the operational history of the facility. Monitoring documentation of liquid levels in the tanks over the active life of the tanks must be provide to the department

427. General. Provide to the Department documentation that the Radioengineering Cells and Highlevel Vault Tanks were constructed to design specifications and associated quality control and quality assurance

428. General. Modify text to explain in detail how the soil located beneath B Cell, and the vaults will be evaluated for clean closure. Address potential corrective action and post closure.

429. General. The closure plan must address the potential for groundwater contamination. There must be a commitment to perform post-closure care if it is determined to be necessary by the department.

430. General. All facility decommissioning coordination must be spelled out in detail in the closure plan and contingent post-closure plan. Modify closure plan accordingly.

431. General. The closure plan must demonstrate that the facility decommissioning process will fulfill all Dangerous Waste regulations applicable to this unit. Modify text to incorporate language describing in detail what requirements apply to this unit and how the facility decommissioning process will fulfill all requirements.

432. General. This chapter fails to address WAC 173-303-645, Releases from regulated units, and WAC 173-303-646, Corrective action. Modify text accordingly.

#### Text Specific Comments

433. 8-1, 5. Revise second sentence to delete "and further cleanup is not effective, it is proposed that closure be integrated with and occur during the Facility Decommissioning process." If clean closure performance standards are not met post closure will be implemented. Closure activities can be coordinated with the Facility Decommissioning process provided that this process does not lead to a change in closure schedule or procedure as described in the approved closure plan. "Further cleanup" must be described. Modify text accordingly.

434. 8-1, 7. A preclosure work plan will not be required by the department. Nor does the department support such a plan in consideration of the resources spent on developing this closure plan which was initiated prior to the 324 Building being declared for Facility Decommissioning. The department will proceed with the development of the closure plan while attempting to coordinate activities where appropriate without compromising the closure of this facility in accordance with the Dangerous Waste regulations, WAC 173-303.

435. 8-1, 10. The reference citation provided "(Ecology et al. 1996, Chapter 8.0) is not included in chapter 9.0, References. Modify text accordingly.

436. 8-1, 12. If it is determined that the unit has contaminated soils or ground water which cannot be completely removed or decontaminated (to meet closure performance standards) during closure, then that unit must also meet the requirements of WAC 173-303-610(7) and WAC 173-303-640(8). The post closure plan must specify the procedures that will be used to satisfy these requirements. Clearly identify how it will be determined if a release to the environment has occurred. Although clean closure is proposed, if clean closure standards can not be met post closure will be implemented. Modify text accordingly.

If an owner or operator has a tank system that does not have secondary containment that meets the requirements of WAC 173-303-640(4)(b) through (f) and is not exempt from the secondary containment requirements in accordance with WAC 173-303-640(4)(g) then the closure plan must include both a plan for complying with WAC 173-303-640(8)(a) for removal or decontamination of all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste and manage them as dangerous waste and a contingent plan for complying with 640(b). A contingent post-closure plan for complying with (b) must be prepared and submitted as part of the closure plan. For the purposes of the contingent closure and post-closure plans, such a tank system is considered a landfill [WAC 173-303-640(8)(c)]. Modify text accordingly.



If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in (a) of this subsection, then the owner or operator must closure the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (See WAC 173-303-665(6)). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in WAC 173-303-610 and 173-303-620 [WAC 173-303-640(8)(b)]. Modify text accordingly.

At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as dangerous waste ... The closure plan, ... must meet all of the requirements specified in WAC 173-303-610 and 173-303-620. [WAC 173-303-640(8)(a)]

In addition, see WAC 173-303-645(1)(a)(i) Except as provided in (b) of this subsection, the regulations in this section apply to owners and operators of *facilities that treat, store or dispose of dangerous waste*. The owner or operator must satisfy the requirements identified in (a)(ii) of this subsection for all waste (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at high waste was placed in such units. (ii) All solid waste management units must comply with the requirements in WAC 173-303-646(2). Revise text accordingly.

## 9.0 References

### Text Specific Comments

437. 9-1, 1. The Department of Energy and its contractors have not justified several modification to the original version of the closure plan submitted to the department for review in January of 1996. Valuable information, including references, contained in the original version has been deleted from this version. Modify closure plan accordingly.

438. Provide a reference for all B Cell Cleanout Plans (BCCP) in chapter 9, References. Indicate which have had regulatory review.

439. The reference citation provided "(Ecology et al. 1996, Chapter 8.0) is not included in chapter 9.0, References. Modify closure plan accordingly.

440. Activities conducted in accordance with the consent order of M-89, and implementing documents Project Management Plan, the Interim Removal Plan and Feasibility Study for Clean Closure must be incorporated into the closure strategy and reference section. Indicate which have had regulatory review. Revise closure plan accordingly.

441. The following documents were not included in chapter 9.0, references. It is recommended that these documents be consulted in revising the closure plan. Valerie Peery, NWP Librarian (509-736-3019), can assist you in obtaining these documents;

Chemical Testing Method for Complying with the Dangerous Waste Regulations. 5/93, Pub #93-51,  
Dangerous Waste Permit Application Requirements, 2/95, Pub #95-402,  
Guidance for Assessing and Certifying Tank Systems that Store and Treat Dangerous Waste, 6/94,  
Pub # 94-114,  
Technical Resource for the Storage and Treatment of Hazardous Waste in Tank Systems. 12/86,  
OSWER Policy Directive No. 9483.00-1, EPA/530-SW-86-044,

## Appendices

442. The change package, M-89, contained in appendix 1A is not signed